PB86-162443

Nationwide Occurrence of Radon and Other Natural Radioactivity in Public Water Supplies

(U.S.) Eastern Environmental Radiation Facility
Montgomery, AL

Oct 85

U.S. Department of Commerce
National Technical Information Service
NTIS

TECHNICAL REPORT DATA

(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA 520/5 85 008	**2.**	**3. RECIPIENT'S ACCESSION NO.** PB86 162443/AS
4. TITLE AND SUBTITLE Nationwide Occurence of Radon and Other Natural Radioactivity in Public Water Supplies		**5. REPORT DATE** October 1985 **6. PERFORMING ORGANIZATION CODE**
7. AUTHOR(S) Thomas R. Horton		**8. PERFORMING ORGANIZATION REPORT NO.**
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency 401 M Street S.W. Washington, D.C. 20460		**10. PROGRAM ELEMENT NO.** **11. CONTRACT/GRANT NO.**
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency 401 M Street S.W. Washington, D.C. 20460		**13. TYPE OF REPORT AND PERIOD COVERED** **14. SPONSORING AGENCY CODE**

15. SUPPLEMENTARY NOTES

16. ABSTRACT

Samples from more than 2500 public water supplies representing 35 states were collected. Although samples were taken from only about 5 percent of the total number of groundwater supplies in the contiguous states of the U.S., those samples represent nearly 45 percent of the water consumed by U.S. groundwater users in the 48 contiguous states.

Sample results are summarized by arithmatic mean for each state and the entire U.S. Results include radon, gross alpha, gross beta, Ra-226, Ra-228, total Ra, U-234, U-238, total U, and U-234/U-283 ratios. Individual public water supply results are found in the appendices.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group

18. DISTRIBUTION STATEMENT Release Unlimited	**19. SECURITY CLASS** *(This Report)* Unclassified	**21. NO. OF PAGES**
	20. SECURITY CLASS *(This page)*	**22. PRICE**

PB86-162443

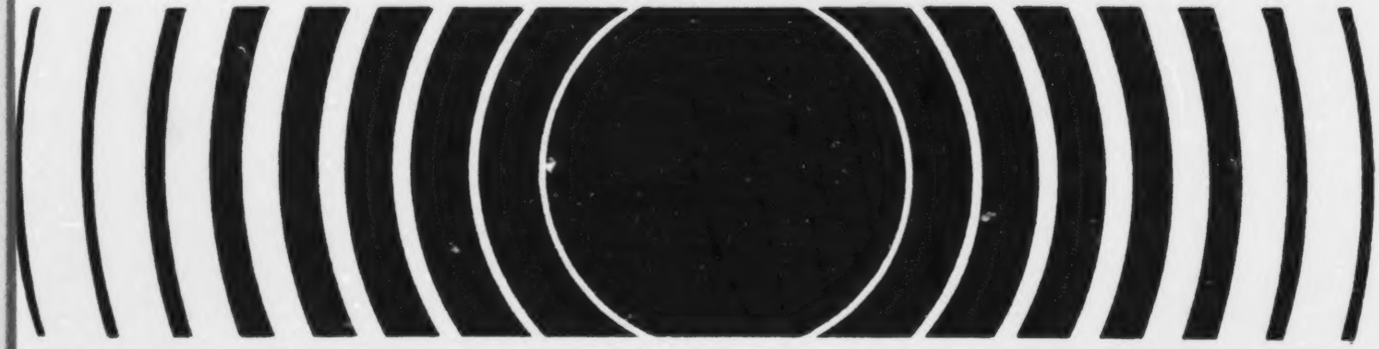
United States
Environmental Protection
Agency

Eastern Environmental
Radiation Facility
1890 Federal Drive
Montgomery, AL 36109

EPA 520/5-85-008
October 1985

Radiation

Nationwide Occurrence of Radon and Other Natural Radioactivity in Public Water Supplies



REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

EPA 520/5-85-008

NATIONWIDE OCCURRENCE OF RADON AND OTHER NATURAL RADIOACTIVITY IN PUBLIC WATER SUPPLIES

Thomas R. Horton

U.S. Environmental Protection Agency
Office of Radiation Programs
Eastern Environmental Radiation Facility
1890 Federal Drive
Montgomery, AL 36109

TABLE OF CONTENTS

Page

List of Figures v

List of Tables xiii

Preface xvii

Acknowledgments xix

Abstract xxiii

1.0 Introduction 1

2.0 Study Design 2

3.0 Radon and Other Natural Radioactivity Measurements 7

3.1 U.S. Rn-222 Results 12

3.2 U.S. Gross Alpha Results 18

3.3 U.S. Gross Beta Results 18

3.4 U.S. Ra-226 Results 18

3.5 U.S. Ra-228 Results 18

3.6 U.S. Total Ra Results 33

3.7 U.S. Ra-226/Ra-228 Ratio Results 33

3.8 U.S. U-234 Results 33

3.9 U.S. U-238 Results 33

3.10 U.S. Total U Results 33

3.11 U.S. U-234/U-238 Ratio Results 50

4.0 Discussion of Results 57

4.1 Section 3 Discussion 57

4.1.1 Rn-222 57

TABLE OF CONTENTS (Continued)

Page

4.1.2 Gross Alpha 58

4.1.3 Gross Beta 58

4.1.4 Ra-226 58

4.1.5 Ra-228 59

4.1.6 Total Ra and Ra-226/Ra-228 Ratio 59

4.1.7 U-234, U-238, Total U, and U-234/U-238 Ratio . 59

4.2 Regional Approach 60

4.3 Selective Monitoring 65

4.3.1 Areas with High Rn-222 Activity 65

4.3.2 Mining Locations as a Screening Method for Uranium 76

4.4 Predictive Modeling 76

5.0 Summary and Conclusions 81

6.0 Recommendations 82

References 83

Appendixes

A. Additional Information on the Study Design 86

B. Radioactivity Results for each Public Water System Sampled 91

C. Summary of Radioactivity Results for Public Surface Water Systems 160

D. Summary of Rn-222 Concentrations for Public Groundwater Systems for Selected Population Ranges 165

E. EPA Regional Contour Maps for Selected Radioactivity Concentrations 171

LIST OF FIGURES

Figure		Page
3.1	Locations of Public Groundwater Supplies Sampled for Rn-222 (1981-1982)	8
3.2	Locations of Public Groundwater Supplies Sampled for Gross Alpha and Gross Beta (1981-1982)	9
3.3	Average Rn-222 Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection)	14
3.4	Average Rn-222 Concentrations in Public Groundwater Supplies (1981-1982) (Contour)	15
3.5	U.S. Public Groundwater Systems (All Results): Rn-222 Concentrations	16
3.6	Population Distribution for Public Groundwater Systems (All Results)	17
3.7	Average Gross Alpha Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection)	20
3.8	Average Gross Alpha Concentrations in Public Groundwater Supplies (1981-1982) (Contour)	21
3.9	U.S. Public Groundwater Systems: Gross Alpha Concentrations	22
3.10	Average Gross Beta Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection)	24
3.11	Average Gross Alpha Concentrations in Public Groundwater Supplies (1981-1982) (Contour)	25
3.12	U.S. Public Groundwater Systems: Gross Beta Concentrations	26
3.13	Average Ra-226 Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection)	28
3.14	Average Ra-226 Concentrations in Public Groundwater Supplies (1981-1982) (Contour)	29

LIST OF FIGURES (Continued)

Figure Page

3.15 U.S. Public Groundwater Systems: Ra-226 Concentrations 30

3.16 U.S. Public Groundwater Systems: Ra-228 Concentrations 32

3.17 U.S. Public Groundwater Systems: Total Ra Concentrations 35

3.18 U.S. Public Groundwater Systems: Ra-226/Ra-228 Ratios 37

3.19 Average U-234 Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection) 39

3.20 Average U-234 Concentrations in Public Groundwater Supplies (1981-1982) (Contour) 40

3.21 U.S. Public Groundwater Systems: U-234 Concentrations 41

3.22 Average U-238 Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection) 43

3.23 Average U-238 Concentrations in Public Groundwater Supplies (1981-1982) (Contour) 44

3.24 U.S. Public Groundwater Systems: U-238 Concentrations 45

3.25 Average Total Uranium Concentrations in Public Groundwater Supplies (1981-1982) (3D Projection) . . 47

3.26 Average Total Uranium Concentrations in Public Groundwater Supplies (1981-1982) (Contour) 48

3.27 U.S. Public Groundwater Systems: Total U Concentrations 49

3.28 Average U-234/U-238 Ratios in Public Groundwater Supplies (Samples with Total Uranium > 3.5 pCi/l) (1981-1982) (3D Projection). 52

LIST OF FIGURES (Continued)

Figure	Page

3.29 Average U-234/U-238 Ratios in Public Groundwater Supplies (Samples with Total Uranium > 3.5 pCi/l) (1981-1982) (Contour) 53

3.30 U.S. Public Groundwater Systems: U-234/U-238 Ratios (Total U > 3.5 pCi/l) 54

3.31 U.S. Public Groundwater Systems: U-234/U-238 Ratios (All Results) 56

4.1 Expanded Locations of Public Groundwater Supplies Sampled for Rn-222 62

4.2 Average Rn-222 Concentrations in Public Groundwater Supplies 1978-1982 (3D Projection) 63

4.3 Average Rn-222 Concentrations in Public Groundwater Supplies 1978-1982 (Contour) 64

4.4 Public Groundwater Supplies Exceeding 500 pCi/l of Rn-222 (Based on the Nationwide Study Only) 66

4.5 Public Groundwater Supplies Exceeding 1000 pCi/l of Rn-222 (Based on the Nationwide Study Only) 67

4.6 Public Groundwater Supplies Exceeding 2000 pCi/l of Rn-222 (Based on the Nationwide Study Only) 68

4.7 Public Groundwater Supplies Exceeding 5000 pCi/l of Rn-222 (Based on the Nationwide Study Only) 69

4.8 Public Groundwater Supplies Exceeding 10,000 pCi/l of Rn-222 (Based on the Nationwide Study Only) 70

4.9 Expanded Locations of Public Groundwater Supplies Sampled for Rn-222 Exceeding 500 pCi/l 71

LIST OF FIGURES (Continued)

Figure Page

4.10 Expanded Locations of Public Groundwater Supplies Sampled for Rn-222 Exceeding 1000 pCi/l 72

4.11 Expanded Locations of Public Groundwater Supplies Sampled for Rn-222 Exceeding 2000 pCi/l 73

4.12 Expanded Locations of Public Groundwater Supplies Sampled for Rn-222 Exceeding 5000 pCi/l 74

4.13 Expanded Locations of Public Groundwater Supplies Sampled for Rn-222 Exceeding 10,000 pCi/l 75

4.14 Locations of Inactive Mining Operations Associated with Uranium 77

4.15 Locations of Active Mining Operations Associated with Uranium 78

4.16 Locations of Both Active and Inactive Mining Operations Associated with Uranium 79

Appendix C

C.1 U.S. Public Surface Water Systems: Rn-222 Concentrations 161

C.2 U.S. Public Surface Water Systems: Gross Alpha Concentrations 162

C.3 U.S. Public Surface Water Systems: Gross Beta Concentrations 163

Appendix D

D.1 Rn-222 Concentrations in U.S. Public Groundwater Systems Serving 1000 or more People 166

D.2 Rn-222 Concentrations in U.S. Public Groundwater Systems Serving Less Than 1000 People 167

D.3 Rn-222 Concentrations in U.S. Public Groundwater Systems Serving Less Than 500 People 168

LIST OF FIGURES (Continued)

Figure | Page

D.4 Rn-222 Concentrations in U.S. Public Groundwater Systems Serving Less Than 100 People 169

Appendix E

E.1 Rn-222 Concentrations in Public Groundwater Region I 1981-1982 172

E.2 Gross Alpha Concentrations in Public Groundwater Region I 1981-1982 173

E.3 Rn-222 Concentrations in Public Groundwater Region II 1981-1982 174

E.4 Gross Alpha Concentrations in Public Groundwater Region II 1981-1982 175

E.5 Rn-222 Concentrations in Public Groundwater Region III 1981-1982 176

E.6 Gross Alpha Concentrations in Public Groundwater Region III 1981-1982 177

E.7 Rn-222 Concentrations in Public Groundwater Region IV 1981-1982 178

E.8 Gross Alpha Concentrations in Public Groundwater Region IV 1981-1982 179

E.9 Ra-226 Concentrations in Public Groundwater Region IV 1981-1982 180

E.10 Total Uranium Concentrations in Public Groundwater Region IV 1981-1982 181

E.11 Rn-222 Concentrations in Public Groundwater Region V 1981-1982 182

E.12 Gross Alpha Concentrations in Public Groundwater Region V 1981-1982 183

E.13 Ra-226 Concentrations in Public Groundwater Region V 1981-1982 184

LIST OF FIGURES (Continued)

Figure Page

E.14 Total Uranium Concentrations in Public Groundwater Region V 1981-1982 185

E.15 Rn-222 Concentrations in Public Groundwater Region VII 1981-1983 186

E.16 Gross Alpha Concentrations in Public Groundwater Region VII 1981-1983 187

E.17 Ra-226 Concentrations in Public Groundwater Region VII 1981-1983 188

E.18 Ra-228 Concentrations in Public Groundwater Region VII 1981-1983 189

E.19 Total Uranium Concentrations in Public Groundwater Region VII 1981-1983 190

E.20 Rn-222 Concentrations in Public Groundwater Region VIII 1981-1982 191

E.21 Gross Alpha Concentrations in Public Groundwater Region VIII 1981-1982 192

E.22 Ra-226 Concentrations in Public Groundwater Region VIII 1981-1982 193

E.23 Total Uranium Concentrations in Public Groundwater Region VIII 1981-1982 194

E.24 Rn-222 Concentrations in Public Groundwater Region IX 1981-1982 195

E.25 Gross Alpha Concentrations in Public Groundwater Region IX 1981-1982 196

E.26 Ra-226 Concentrations in Public Groundwater Region IX 1981-1982 197

E.27 Total Uranium Concentrations in Public Groundwater Region IX 1981-1982 198

LIST OF FIGURES (Continued)

Figure Page

E.28 Rn-222 Concentrations in Public Groundwater Region X 1981-1982 199

E.29 Gross Alpha Concentrations in Public Groundwater Region X 1981-1982 200

E.30 Rn-222 Concentrations in Public Groundwater Georgia, N. Carolina, S. Carolina, Virginia 1981-1982 201

E.31 Ra-226 Concentrations in Public Groundwater Georgia, N. Carolina, S. Carolina, Virginia 1981-1982 202

E.32 Total Uranium Concentrations in Public Groundwater Georgia, N. Carolina, S. Carolina, Virginia 1981-1982 203

E.33 Rn-222 Concentrations in Public Groundwater Region I 1978-1982 204

E.34 Rn-222 Concentrations in Public Groundwater Region II 1978-1982 205

E.35 Rn-222 Concentrations in Public Groundwater Region VI 1978-1982 206

E.36 Rn-222 Concentrations in Public Groundwater Region VII 1978-1982 207

E.37 Rn-222 Concentrations in Public Groundwater Region IX 1978-1982 208

LIST OF TABLES

Table Page

2.1 Study Design for Sample Collection Effort 4

3.1 Population Covered by this Study 10

3.2 Summary of Rn-222 Concentrations in Public Groundwater Systems 13

3.3 Summary of Gross Alpha Concentrations in Public Groundwater Systems 19

3.4 Summary of Gross Beta Concentrations in Public Groundwater Systems 23

3.5 Summary of Ra-226 Concentrations in Public Groundwater Systems 27

3.6 Summary of Ra-228 Concentrations in Public Groundwater Systems 31

3.7 Summary of Total Ra Concentrations in Public Groundwater Systems 34

3.8 Summary of Ra-226/Ra-228 Ratios in Public Groundwater Systems 36

3.9 Summary of U-234 Concentrations in Public Groundwater Systems 38

3.10 Summary of U-238 Concentrations in Public Groundwater Systems 42

3.11 Summary of Total U Concentrations in Public Groundwater Systems 46

3.12 Summary of U-234/U-238 Ratios (Total U > 3.5 pCi/l) in Public Groundwater Systems 51

3.13 Summary of U-234/U-238 Ratios (All Results) in Public Groundwater Systems 55

LIST OF TABLES (Continued)

Appendix B

Table		Page
B.1	Natural Radioactivity in Public Water Systems - Alabama	92
B.2	Natural Radioactivity in Public Groundwater Systems - Arizona	94
B.3	Natural Radioactivity in Public Groundwater Systems - Colorado	96
B.4	Natural Radioactivity in Public Groundwater Systems - Delaware	97
B.5	Natural Radioactivity in Public Groundwater Systems - Florida	98
B.6	Natural Radioactivity in Public Groundwater Systems - Georgia	102
B.7	Natural Radioactivity in Public Groundwater Systems - Idaho	104
B.8	Natural Radioactivity in Public Groundwater Systems - Illinois	106
B.9	Natural Radioactivity in Public Groundwater Systems - Indiana	109
B.10	Natural Radioactivity in Public Groundwater Systems - Kansas	111
B.11	Natural Radioactivity in Public Groundwater Systems - Kentucky	112
B.12	Natural Radioactivity in Public Groundwater Systems - Maine	113
B.13	Natural Radioactivity in Public Groundwater Systems - Massachusetts	114
B.14	Natural Radioactivity in Public Water Systems - Minnesota	117

LIST OF TABLES (Continued)

Table		Page
B.15	Natural Radioactivity in Public Groundwater Systems - Mississippi	120
B.16	Natural Radioactivity in Public Water Systems - Montana	122
B.17	Natural Radioactivity in Public Groundwater Systems - Nevada	123
B.18	Natural Radioactivity in Public Groundwater Systems - New Hampshire	124
B.19	Natural Radioactivity in Public Groundwater Systems - New Mexico	125
B.20	Natural Radioactivity in Public Groundwater Systems - New York	127
B.21	Natural Radioactivity in Public Water Systems - North Carolina	130
B.22	Natural Radioactivity in Public Water Systems - North Dakota	134
B.23	Natural Radioactivity in Public Groundwater Systems - Ohio	136
B.24	Natural Radioactivity in Public Groundwater Systems - Oklahoma	138
B.25	Natural Radioactivity in Public Groundwater Systems - Oregon	139
B.26	Natural Radioactivity in Public Groundwater Systems - Pennsylvania	141
B.27	Natural Radioactivity in Public Groundwater Systems - Rhode Island	143
B.28	Natural Radioactivity in Public Groundwater Systems - South Carolina	144

LIST OF TABLES (Continued)

Table Page

B.29 Natural Radioactivity in Public Groundwater Systems - South Dakota 147

B.30 Natural Radioactivity in Public Groundwater Systems - Tennessee 149

B.31 Natural Radioactivity in Public Groundwater Systems - Utah 150

B.32 Natural Radioactivity in Public Groundwater Systems - Vermont 152

B.33 Natural Radioactivity in Public Groundwater Systems - Virginia 153

B.34 Natural Radioactivity in Public Groundwater Systems - Wisconsin 156

B.35 Natural Radioactivity in Public Water Systems - Wyoming 159

Appendix C

C.1 Summary of U.S. Radioactivity Concentrations in Public Surface Water Systems 164

Appendix D

D.1 Summary of U.S. Rn-222 Concentrations in Public Groundwater Systems for Selected Population Ranges 170

PREFACE

The Eastern Environmental Radiation Facility (EERF) participates in the identification of solutions to problem areas as defined by the Office of Radiation Programs. The Facility provides analytical capability for evaluation and assessment of radiation sources through environmental studies and surveillance and analysis. The EERF provides technical assistance to state and local health departments in their radiological health programs and provides special analytical support for Environmental Protection Agency Regional Offices and other federal government agencies as requested.

This report summarizes the results of a nationwide study of radon in public water supplies spanning a five year period.

Charles R. Porter
Director
Eastern Environmental Radiation Facility

ACKNOWLEDGMENTS

The following persons were the principal contacts in each state coordinating sample collection.

AL	J. Downey
AZ	L. Herzmark, M. Stroud
CO	C. Aikele, H. Holmes
DE	R. Howell, III
FL	J. Eakins, W. Johnson, R. Rosson, K. Taylor
GA	C. Blackman, W. Cline
ID	R. Funderburg, A. Justus
IL	P. Eastvold, D. Derenzo, D. Dolan
IN	J. Corpuz
KS	H. Spiker
KY	D. Draper
ME	P. Dostie, W. Hinckley
MA	W. Bell, R. Hallisey
MN	G. Englund
MS	W. Green
MT	D. Fraser, L. Lloyd
NV	A. Edmundson
NH	D. Tefft, J. Stanton
NM	S. Pierce, G. Cordova
NY	J. Hutchinson
NC	S. Fong
ND	J. Burgess, D. Mount
OH	R. Quillin, B. Wilmoth
OK	R. Craig
OR	G. Toombs
PA	M. Reilly
RI	W. Dundulis, L. Geremia
SC	N. Bivens
SD	D. Busch, R. Brich
TN	C. West, E. Nanning
UT	B. Howard, D. Mitchell
VT	K. Stone, A. Rosenau
VA	T. Stone
WI	L. McDonnell, M. Bunge
WY	H. Hutchings, T. Schell

The following persons at EERF contributed significantly to this study.

Radiochemistry

A. Culver
R. Lieberman
V. Lloyd
G. Luster
M. Mardis
J. Moore (QA)
E. Raabe
A. Smith
Z. Smith
L. Williams
H. Wilson

Computer Support

M. Knight
K. McCroan
D. Norwood
W. Naftel

Sample Counting

B. Head
R. Olm
B. Sedinger
M. Semler
F. Steger

Other

S. Baker (logging in samples and results)
R. Jackson (contracts)
C. Kelso (graphics)
R. Lincoln (contracts and supplies)
K. Newman (sample counting and calculations)
J. Partridge (originator of this study)
C. Petko (editorial)
E. Sensintaffar (radon sample collection and counting methodology)
M. Wilkes (typing)

The following USEPA persons outside of EERF made significant contributions to this study.

M. O'Connell, formerly with ORP-Las Vegas, NV
B. Keene, Region I, Boston, MA
W. Brinck, Region VII, Kansas City, MO
C. Cothern, Office Of Drinking Water, Washington, DC
F. Martin, Office of Drinking Water, Washington, DC
L. Weiner, Office of Drinking Water, Washington, DC

I especially would like to recognize the efforts of several individuals who made major contributions to this report and to the overall radon in water study. Mike O'Connell (formerly with ORP-LV) offered many helpful suggestions during the startup of the nationwide study. He also was instrumental in getting most of the western states to participate (those in EPA Regions 8, 9, and 10). Kitty Newman was in charge of counting all the radon in water samples, maintaining data sheets for all water supplies sampled, and calculating radon in water concentrations. Keith McCroan developed the computer software for mapping radionuclide concentrations. Martha Knight patiently produced all the contour, 3-D projection, and location maps. Mardy Wilkes patiently typed the many drafts of this report.

I would like to extend my sincere appreciation to the reviewers of the draft reports for their many helpful comments: Dr. Jon Broadway (EERF), Mr. Sam Windham (EERF), Dr. Bernd Kahn (Georgia Tech), Dr. Bob Sullivan (ORP-HQ), and Dr. Rick Cothern (ODW).

ABSTRACT

In 1978, the Environmental Protection Agency, through its Eastern Environmental Radiation Facility, began sampling radon in drinking water. During the next two to three years, approximately 27 states were included in this pilot study. The subject of this report is the nationwide study that developed from that pilot study.

The nationwide study, which began in November of 1980, was designed to systematically sample water supplies in all 48 contiguous states. The results of the study will be used, in cooperation with EPA's Office of Drinking Water, to estimate population exposures nationwide and to support possible future standards for radon, uranium, and other natural radioactivity in public water supplies.

Samples from more than 2500 public water supplies representing 35 states were collected. Although we sampled only about five percent of the total number of groundwater supplies in the 48 contiguous states of the U.S., those samples represent nearly 45 percent of the water consumed by U.S. groundwater users in the 48 contiguous states.

Sample results are summarized by arithmetic mean, geometric mean, and population weighted arithmetic mean for each state and the entire U.S. Results include radon, gross alpha, gross beta, Ra-226, Ra-228, total Ra, U-234, U-238, total U, and U-234/U-238 ratios. Individual public water supply results are found in the appendices.

As with any survey that only samples a limited number within the overall population available for sampling, certain biases will occur in the final results. By only sampling public groundwater supplies serving at least 1000 or more people, many smaller public groundwater supplies with elevated radon levels were not sampled (He84). Small public groundwater supplies and private wells tend to have the highest radon in water levels (He84). The Ra-226 and uranium results are biased since only samples with elevated gross alpha were analyzed for Ra-226 and uranium. The Ra-228 results are even more biased since Ra-228 analyses were only performed for samples with elevated Ra-226.

1.0 INTRODUCTION

During 1978, the Environmental Protection Agency (EPA), through its Eastern Environmental Radiation Facility (EERF), began sampling radon in drinking water. During the next two to three years, approximately 27 states were included in this pilot study, the purpose of which was to determine the need for a nationwide study of radon in drinking water; to demonstrate the feasibility of such a study; and to develop a limited data base of radon in drinking water nationwide. Water supplies sampled during the pilot study were, in many cases selected because of known or suspected elevated levels of radon or out of convenience leading to arbitrary or random results. For the most part, state health personnel were free to sample any type of water, including private wells and wells not used for drinking water. The results for drinking water have been summarized in another publication (He84). These include private wells, public surface water, public water supplies (may include both groundwater and surface water) and public groundwater - all by state and U.S. averages (geometric means). The pilot study results will not be discussed in any great detail in this report due to the statistical uncertainty associated with much of the data. The subject of this report is the nationwide study that developed from that pilot study.

The nationwide study, which began in November of 1980, was designed to systematically sample water supplies in all 48 contiguous states. The results of the study will be used, in cooperation with EPA's Office of Drinking Water (ODW), to estimate population exposures nationwide and to support possible future standards for radon, uranium, and other natural radioactivity in public water supples.

2.0 STUDY DESIGN

The study design called for sampling only finished water; limited sampling to once per water supply; targeted composited samples or system samples instead of individual well supplies; encouraged sampling as near the source of water as possible; and excluded surface water supplies (no significant radon was detected in surface water in the pilot study) and supplies that served less than 1000 people. Our intent was to collect samples that represented what people actually consume from a given public water supply.

During the pilot study, many samples were untreated water which may not have represented what people were actually consuming (Pr83). Treatment processes such as the use of aerators may significantly reduce radon levels to the public. Storage tanks also allow radon levels to decline due to radioactive decay of radon.

For practical reasons, each water supply was sampled only once. Typically, radon levels are not expected to vary much more than a factor of two seasonally if the source of water remains the same. This was observed in a study in the area of Houston, Texas (Pr81). Water systems having more than one well can have significant differences in radon levels from one well to the next. For this reason, consumer tap or composite samples were specified in order to obtain average levels or more representative levels applicable to the entire water system. Samples collected near the source of water were preferred in order to obtain a fresher sample with less decay of radon.

During the pilot study, samples from public surface water contained little or no radon. This lack of radon was confirmed by another approximate 25 public surface water supply samples taken during the nationwide study.

Originally, the nationwide study specified looking at all public groundwater supplies serving 5000 or more people. After receiving a detailed listing of all public groundwater systems serving 1000 or more people (EPA80), it was obvious that an adjustment was needed in the size of the water system to be sampled. At the 5000 person level some states had only a few water supplies to be included. In order to balance the need for a representative sampling of each state and the artificial requirement that less than 200 water supplies be sampled in any one state (contract limitation), a collection scheme was formulated (see Table 2.1). For half the states, water systems serving 1000 or more people were scheduled for sampling. These states included those with small populations or if possible with known or suspected elevated radon levels. An attempt was made to put the remaining states at the 3000 person level. Six states remained at the 5000 person level: four of which exceeded the contract limitation at the 3000 person level and the other two were limited by the total contract dollar amount for all 48 states.

Each state was given the opportunity to participate in the collection of samples via a service contract. A copy of the procurement statement associated with each service contract is shown in Appendix A as Exhibit A.1. Each sample taken was identified by the information found on the sampling and analysis form (see Appendix A, Exhibit A.2). A copy of our sample collection criteria is presented in Appendix A as Exhibit A.3.

Radon sampling and analysis methods will not be discussed in this report. Previous papers cover this area in detail (Ho83, Pr77). Specific topics discussed include sampling method, liquid scintillation counting, Ra-226 calibration, radon concentration determination, and precision and accuracy of radon determinations (Ho83).

In addition to the radon samples, a one gallon cubitainer water sample was collected for each water supply included in the study. These samples allowed us to obtain other data on natural radioactivity in public drinking water for very little extra collection effort. Our analyses of these samples were guided, generally, by the requirements of the Safe Drinking Water Act (SDWA) (EPA76).

All samples were analyzed for gross alpha and gross beta. If the gross alpha was equal to or greater than 5 pCi/l, a Ra-226 analysis was performed. Shortly after the study began, the cutoff for Ra-226 analyses was dropped to 3 pCi/l to provide more data. Ra-228 analyses were performed for samples where the Ra-226 was equal to or greater than 3 pCi/l. During the second half of the study, samples whose gross beta exceeded 15 pCi/l were also analyzed

Table 2.1 Study design for sample collection effort

State	No. of Public Groundwater Systems to be Sampled	Percent of Groundwater Pop. to be Sampled per Study Design	Population Served by each Public Groundwater System	Total Population Served by Public Groundwater**
AL	76	66	3000+*	889,000
AR	55	81	3000+	1,179,000
AZ	137	93	1000+	1,808,000
CA	192	82	5000+	5,954,000
CO	71	92	1000+	1,461,000
CT	30	82	1000+	317,000
DE	36	93	1000+	521,000
FL	199	80	5000+	7,320,000
GA	83	74	3000+	1,450,000
IA	76	65	3000+	1,515,000
ID	69	80	1000+	533,000
IL	153	76	5000+	3,672,000
IN	103	77	3000+	1,607,000
KS	39	53	3000+	707,000
KY	51	80	1000+	188,000
LA	94	75	3000+	1,766,000
MA	98	94	3000+	1,162,000
MD	77	98	1000+	3,602,000
ME	25	75	1000+	119,000
MI	55	70	5000+	1,981,000
MN	104	76	3000+	1,829,000
MO	89	65	3000+	1,210,000
MS	93	55	3000+	1,695,000
MT	35	58	1000+	163,000

Table 2.1 Study design for sample collection effort-continued

State	No. of Public Groundwater Systems to be Sampled	Percent of Groundwater Pop. to be Sampled per Study Design	Population Served by each Public Groundwater System	Total Population Served by Public Groundwater**
NC	188	64	1000+	965,000
NE	41	57	3000+	600,000
ND	59	68	1000+	220,000
NH	25	88	1000+	209,000
NJ	165	92	3000+	2,929,000
NM	69	90	1000+	876,000
NV	25	60	1000+	107,000
NY	133	85	3000+	3,807,000
OH	86	73	5000+	2,685,000
OK	32	57	3000+	545,000
OR	63	74	1000+	376,000
PA	89	59	3000+	1,533,000
RI	11	92	1000+	90,000
SC	117	89	1000+	1,395,000
SD	50	68	1000+	306,000
TN	51	86	3000+	1,318,000
TX	150	58	5000+	4,277,000
UT	96	92	1000+	683,000
VA	104	50	1000+	489,000
VT	16	43	1000+	86,000
WA	111	75	3000+	1,983,000
WV	69	79	1000+	383,000
WI	140	> 69	1000+	1,575,000
WY	22	67	1000+	105,000
Total	3952			70,190,000

* Equal to or greater than this number. For example, in the case of Alabama the smallest public groundwater system served at least 3000 people.

** Rounded to the nearest 1000 (EPA80).

for Ra-228. Where the gross beta exceeded 50 pCi/l, an attempt was made to identify contributing radionuclides by gamma spectroscopy and strontium analysis.

Originally, uranium and thorium analyses were performed if the gross alpha was equal to or greater than 15 pCi/l. After a few months into the study, the cutoff for uranium and thorium analyses was reduced to 3 pCi/l, the same as for Ra-226. The cutoff for any radionuclide-specific analysis was a function of the EERF's sample load at any given time. The vast majority of the samples were analyzed under the lowest cutoff criterion. After performing more than 100 thorium analyses, it was decided that thorium analyses were unnecessary because the concentrations found in groundwater were very low (i.e., typically less than 0.1 pCi/l for Th-227, Th-228, Th-230, and Th-232). At these levels, the measurements are not significantly different from zero. One Ra-226, uranium, and thorium analysis was performed for each state involved in the study, regardless of whether any sample from a given state met our cutoff criteria. This provides us with at least one measurement for each state.

3.0 RADON AND OTHER NATURAL RADIOACTIVITY MEASUREMENTS

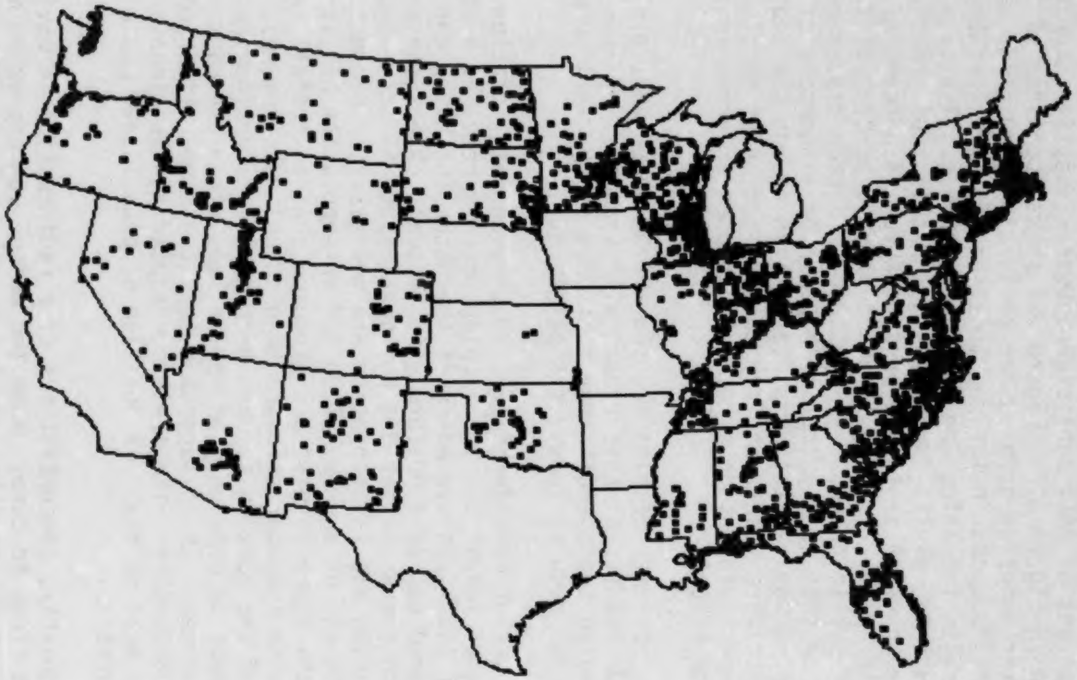
Locations of 2457 public groundwater supplies samples for radon are shown in Figure 3.1. Figure 3.2 shows locations of 2510 public groundwater supplies sampled for gross alpha and gross beta. The primary differences in the two location maps are the absence of radon results for Maine and the fewer radon results than gross alpha and gross beta results for Kansas and Mississippi. Nationwide, the public groundwater systems represent about 44 percent of the total groundwater usage (Table 3.1) or about five percent of the total number of public groundwater systems. Thirteen states were not included in the study primarily because of a shortage of manpower and money in the respective states. Even though the state health departments were reimbursed for the collection of samples, the reimbursement did not cover actual expenses incurred in the collection effort.

Radioactivity results are summarized in several different ways to provide readers of this report with practical options in understanding the overall impact of this study. All summaries are based on raw results found in Appendix B.

The use of maps is helpful in showing both location and the magnitude of levels but the mapping process requires a certain amount of localized averaging of the data (the highs and the lows are averaged out in a uniform grid system). When data are missing (e.g., those states that did not participate in this study), extrapolation and interpolation are necessary in producing the maps. The use of extrapolation and interpolation has its limitations since results are produced that potentially are more dependent on computer software than actual measurements. The sole purpose of the maps is to show general trends nationwide. If that idea is kept in mind when using the maps, then the maps can serve a useful purpose. It is suggested that the three dimensional maps be used in conjunction with their corresponding two dimensional (contour) maps so that the position of peak levels can be located more accurately.

Frequently, concentrations of a radionuclide in environmental media are close to zero. When the actual concentration of a nuclide is zero, the net counting results should statistically show a distribution of negative and positive numbers about zero. This occurs when the background count is subtracted from a sample which has only background activity. When reviewing the data in this

Figure 3.1. Locations of public groundwater supplies sampled for Rn-222 (1981-1982)



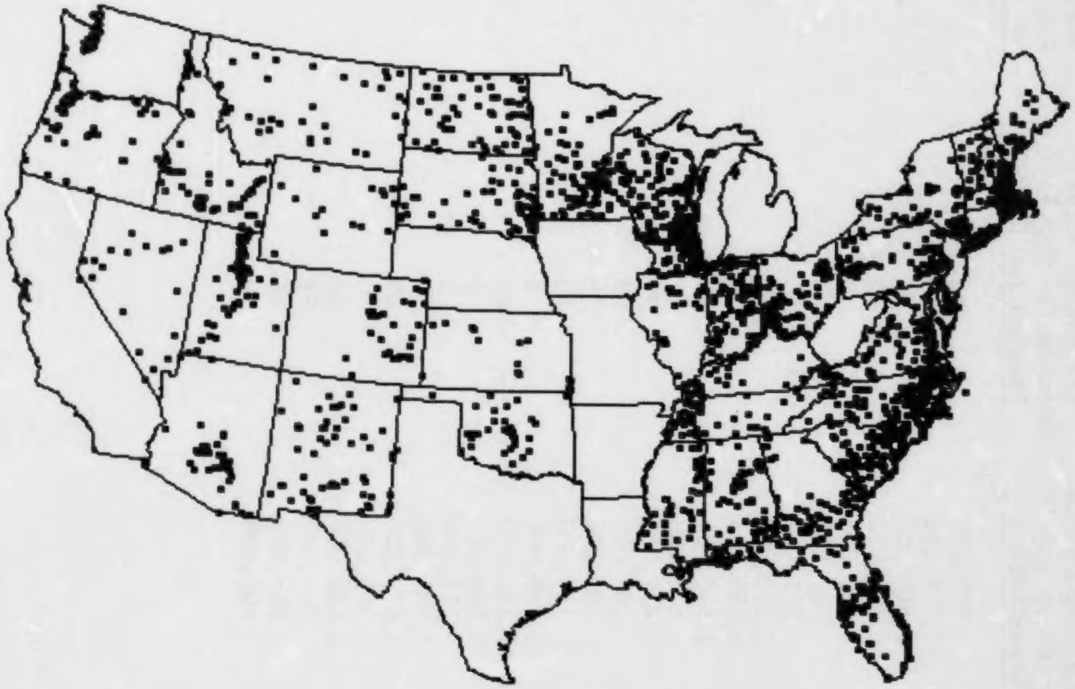


Figure 3.2. Locations of public groundwater supplies sampled for gross alpha and gross beta (1981-1982)

Table 3.1 Population covered by this study

State	[illegible]tal Population [illegible]erved by Public Groundwater*	Percent of Actual Groundwater Population Sampled for Rn-222	Actual Groundwater Population Sampled for Rn-222
AL	889,000	66	582,910
AR	1,179,000	0	0
AZ	1,808,000	NK	1,930,348
CA	5,954,000	0	0
CO	1,461,000	9	130,754
CT	317,000	0	0
DE	521,000	55	284,082
FL	7,320,000	NK	7,585,805
GA	1,450,000	38	549,168
IA	1,515,000	0	0
ID	533,000	87	463,005
IL	3,672,000	77	2,838,632
IN	1,607,000	69	1,103,454
KS	707,000	8	57,589
KY	188,000	80	151,110
LA	1,766,000	0	0
MA	1,162,000	89	1,029,010
MD	3,602,000	0	0
ME	119,000	0	0
MI	1,981,000	0	0
MN	1,829,000	85	1,546,294
MO	1,210,000	0	0
MS	1,695,000	34	572,557
MT	163,000	59	96,115
NC	965,000	44	427,278
NE	600,000	0	0

Table 3.1 Population covered by this study - continued

State	Total Population Served by Public Groundwater*	Percent of Actual Groundwater Population Sampled for Rn-222	Actual Groundwater Population Sampled for Rn-222
ND	220,000	73	159,901
NH	209,000	61	127,074
NJ	2,929,000	0	0
NM	876,000	90	789,544
NV	107,000	70	74,650
NY	3,807,000	71	2,698,801
OH	2,685,000	70	1,879,178
OK	545,000	56	307,776
OR	376,000	70	264,941
PA	1,533,000	67	1,034,163
RI	90,000	NK	174,500
SC	1,395,000	34	468,593
SD	306,000	71	217,928
TN	1,318,000	77	1,018,193
TX	4,277,000	0	0
UT	683,000	NK	841,997
VA	489,000	48	236,984
VT	86,000	28	23,760
WA	1,983,000	0	0
WV	383,000	0	0
WI	1,575,000	71	1,120,128
WY	105,000	59	61,854
Total	70,190,000		30,848,292

* Rounded to the nearest 1000 (EPA80).
NK Not known.

report, caution should be exercised in the interpretation of individual negative values. Obviously, a negative activity value does not have physical significance. Such numbers, however, are significant when taken together with other observations which indicate that the true value of a distribution is near zero. When an average of several measurements produces a result less than zero, this indicates a negative bias in the measurement procedure.

3.1 U.S. Rn-222 Results

Table 3.2 presents arithmetic means, geometric means, and population weighted arithmetic means for water supplies sampled for Rn-222*. Figures 3.3 and 3.4 display Rn-222 concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of Rn-222 concentrations is shown in Figure 3.5 with the corresponding population distribution associated with these Rn-222 concentrations given in Figure 3.6.

Some of the water supplies sampled during the nationwide study did not meet our sampling criteria. These include surface water supplies and groundwater supplies not serving at least 1000 people. Surface water supply results were separated from the groundwater supply results. All public groundwater results were included in the analysis of groundwater results.

---

* The arithmetic mean is commonly used to describe a normal distribution of data while the geometric mean (or median) typically is employed for characterizing log normal distributions of data. In calculating a geometric mean, all data points are given equal weighting. For an arithmetic mean calculation, the large values dominate the resulting mean. Environmental radioactivity measurements tend to follow a log normal distribution; therefore, a geometric mean is more representative of the data. On the other hand the arithmetic mean is needed for dose and health effects (risk) calculations. A third mean was computed based on population. The arithmetic mean was weighted by population. The purpose of the resulting population weighted arithmetic mean is to eliminate any bias due to variations in water supply sizing. The population weighted arithmetic mean can also be used for dose and risk computations.

All mean and standard deviation results are computer generated. All results should be rounded off to three significant figures or less when using these results.

Table 3.2 Summary of Rn-222 concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	132.8 SD= 129.8	77.6 GD= 4.3	160.7	582910	74
AZ	468.6 SD= 799.4	217.2 GD= 7.6	329.3	1930348	64
CO	399.5 SD= 441.7	219.1 GD= 6.5	380.7	130754	37
DE	98.4 SD= 87.6	28.0 GD=20.3	126.4	284082	36
FL	146.8 SD= 227.4	23.0 GD=33.7	148.5	7585805	165
GA	275.2 SD= 603.6	115.6 GD= 3.3	147.4	549168	61
ID	304.6 SD= 308.3	119.1 GD=10.7	256.6	463005	68
IL	174.3 SD= 153.5	100.8 GD= 5.1	167.6	2838632	149
IN	115.3 SD= 118.1	27.5 GD=21.2	105.4	1103454	94
KS	115.9 SD= 118.3	67.1 GD= 3.6	106.0	57589	7
KY	127.2 SD= 114.8	26.2 GD=29.2	107.8	151110	50
MA	790.2 SD= 662.4	506.9 GD= 4.2	769.4	1029010	100
MN	231.1 SD= 215.8	110.0 GD= 9.6	210.3	1546294	106
MS	80.4 SD= 89.9	20.4 GD=19.5	82.0	572557	53
MT	465.3 SD= 408.5	243.7 GD= 7.6	328.6	96115	33
NC	544.9 SD=1400.6	47.6 GD=38.3	278.6	427278	166
ND	164.9 SD= 187.7	32.7 GD=33.0	148.8	159901	68
NH	1387.9 SD=1032.6	943.8 GD= 2.8	1183.6	127074	26
NM	262.3 SD= 289.4	50.1 GD=32.9	178.1	789544	69
NV	448.4 SD= 397.1	146.3 GD=20.7	550.8	74650	25
NY	171.4 SD= 171.4	42.7 GD=22.6	132.1	2698801	130
OH	167.9 SD= 159.8	71.4 GD= 9.7	169.8	1879178	84
OK	165.5 SD= 162.0	122.1 GD= 2.2	160.0	307776	32
OR	260.2 SD= 214.7	116.0 GD=11.2	264.0	264941	57
PA	756.8 SD= 832.7	343.1 GD= 7.1	719.9	1034163	89
RI	1375.5 SD= 774.5	1140.3 GD= 2.0	1511.1	174500	31*
SC	494.4 SD=1743.4	80.6 GD=16.9	276.9	468593	106
SD	384.1 SD= 457.2	149.9 GD=11.6	289.2	217928	59
TN	113.4 SD= 190.0	6.7 GD=60.2	23.8	1018193	50
UT	350.4 SD= 328.4	144.0 GD=13.5	360.9	841997	99
VA	679.3 SD=1483.2	147.1 GD=15.5	447.8	236984	101
VT	617.9 SD= 300.3	555.8 GD= 1.6	656.8	23760	11
WI	337.6 SD= 675.4	157.0 GD= 5.8	234.4	1120128	140
WY	478.4 SD= 407.8	331.8 GD= 2.5	415.3	61854	17
US	352.8 SD= 751.9	86.6 GD=16.4	232.1	30848292	2457

SD equals standard deviation.
GD equals geometric standard deviation.
* Represents 31 individual wells but only 11 public water systems.

Figure 3.3. Average Rn-222 concentrations in public groundwater supplies (1981-1982)

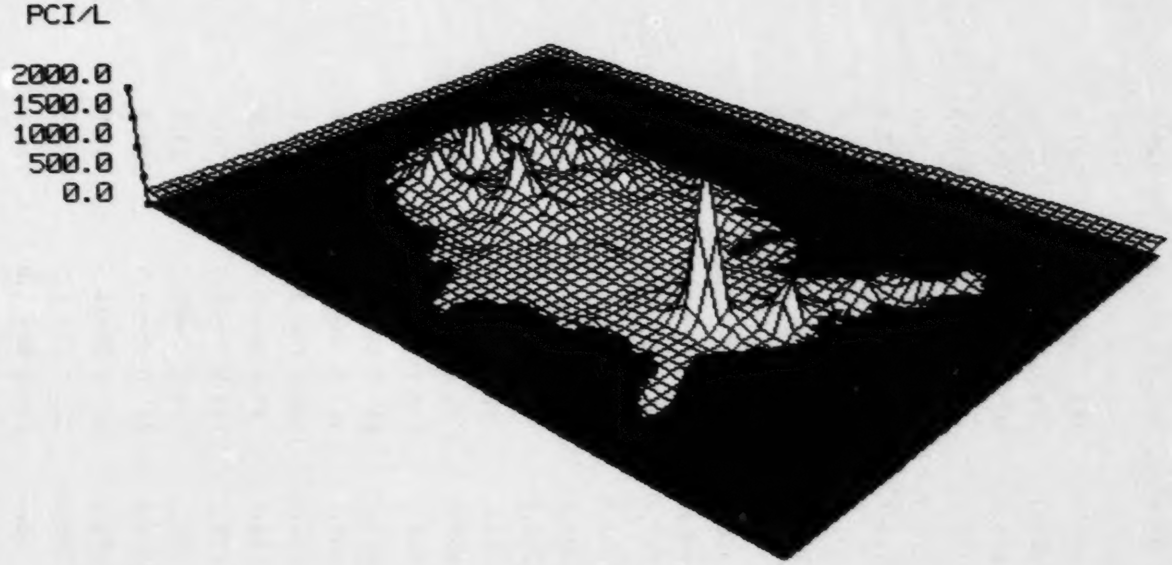
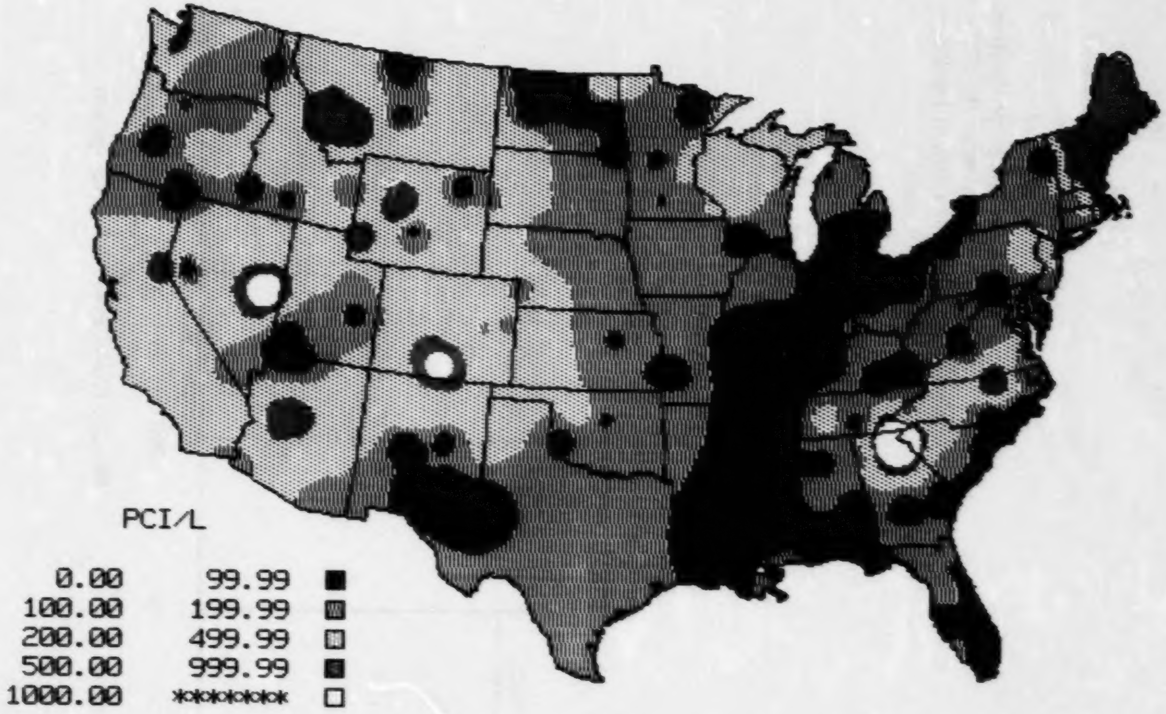


Figure 3.4. Average Rn-222 concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ▨
1000.00 ******* □

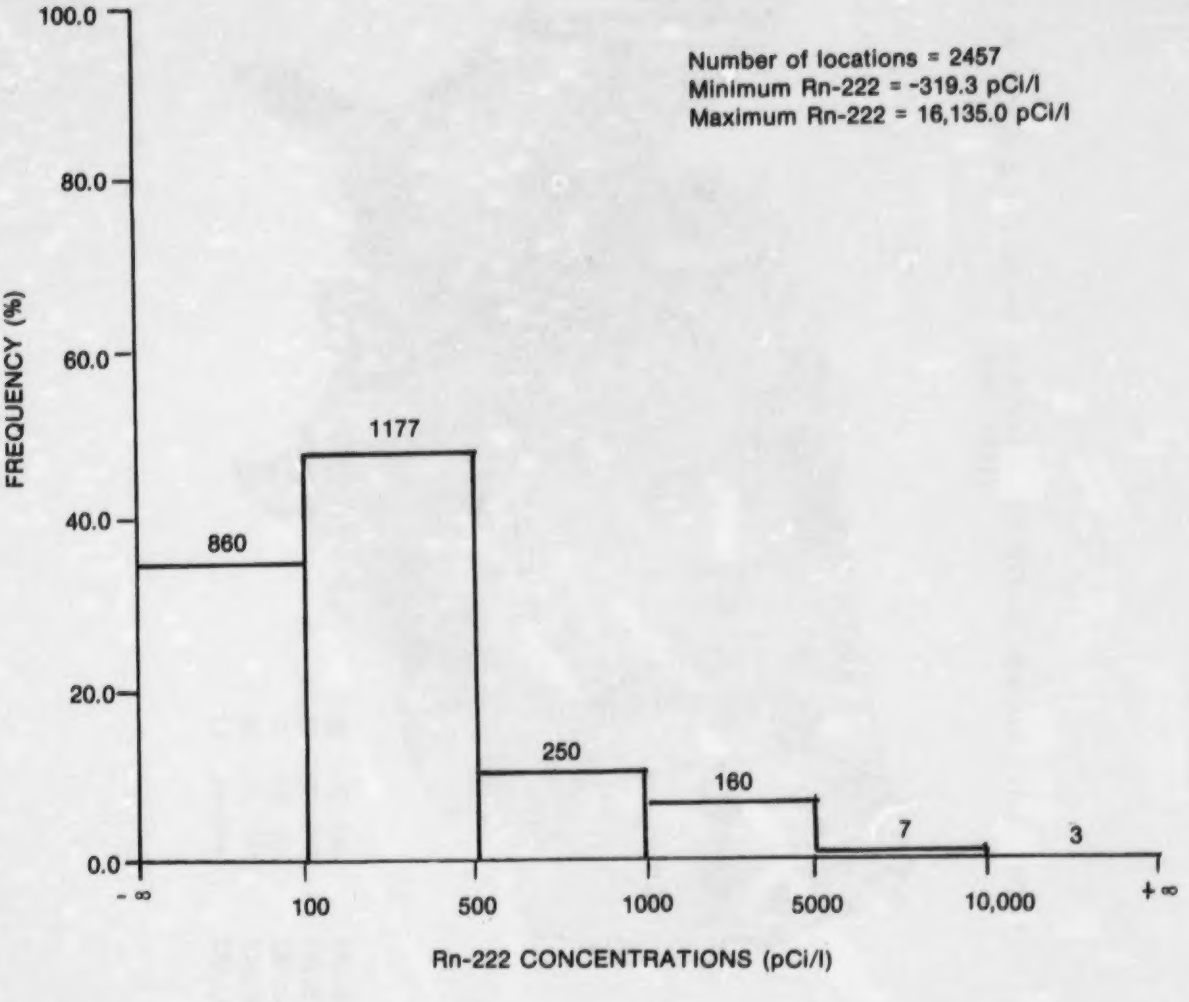


Figure 3.5. U.S. public groundwater systems (all results): Rn-222 concentrations

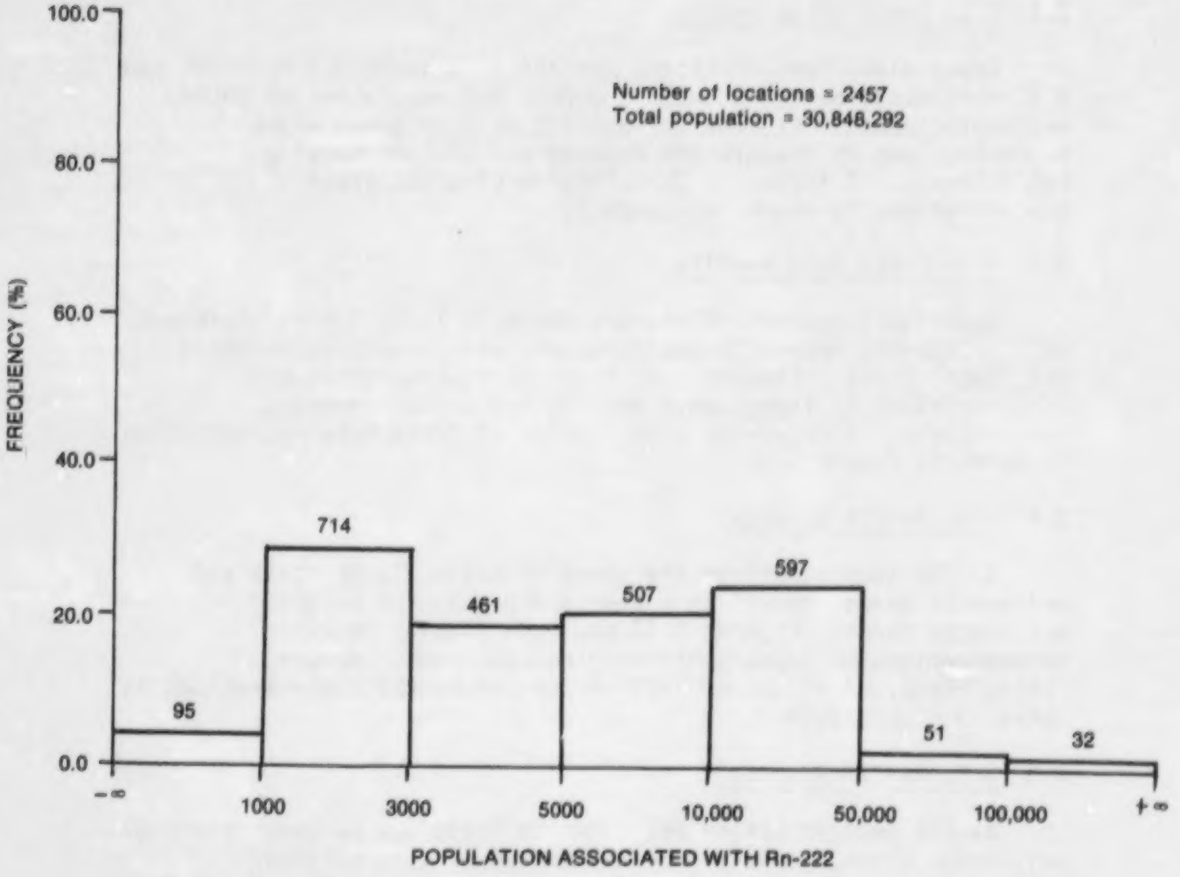


Figure 3.6. Population distribution for public groundwater systems (all results)

Of the more than 2500 public water supplies sampled in the nationwide study, 26 of these supplies were public surface supplies. Surface supply results for Rn-222, gross alpha, and gross beta are summarized in Appendix C.

The vast majority of the sampled groundwater supplies served at least 1000 or more people. Only 95 groundwater supplies served less than 1000 people. Of these, five served less than 100 people. Rn-222 results by population range are given in Appendix D.

3.2 U.S. Gross Alpha Results

Gross alpha concentrations are shown in Table 3.3 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. Figures 3.7 and 3.8 display gross alpha concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of gross alpha concentrations is shown in Figure 3.9.

3.3 U.S. Gross Beta Results

Gross beta concentrations are shown in Table 3.4 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. Figures 3.10 and 3.11 display gross beta concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of gross beta concentrations is shown in Figure 3.12.

3.4 U.S. Ra-226 Results

Ra-226 concentrations are shown in Table 3.5 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. Figures 3.13 and 3.14 display Ra-226 concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of Ra-226 concentrations is shown in Figure 3.15.

3.5 U.S. Ra-228 Results

Ra-228 concentrations are shown in Table 3.6 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. A frequency distribution of Ra-228 concentrations is shown in Figure 3.16.

Table 3.3 Summary of gross alpha concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	0.6 SD= 0.7	0.3 GD= 4.1	0.5	582910	74
AZ	2.3 SD= 3.0	1.0 GD= 5.9	1.6	1936898	65
CO	9.1 SD= 12.4	3.4 GD= 6.5	10.3	130754	37
DE	0.4 SD= 0.6	0.2 GD= 4.3	0.4	284082	36
FL	0.6 SD= 0.6	0.3 GD= 4.3	0.6	7585805	165
GA	1.6 SD= 2.3	0.6 GD= 6.9	1.4	539418	58
ID	2.6 SD= 4.1	0.9 GD= 5.7	2.8	463005	68
IL	6.7 SD= 8.3	1.9 GD= 8.9	7.4	2821132	148
IN	0.7 SD= 0.6	0.4 GD= 4.0	0.6	1075954	90
KS	6.5 SD= 6.6	3.4 GD= 3.6	2.2	382722	16
KY	0.5 SD= 0.4	0.3 GD= 3.5	0.6	152810	51
MA	0.3 SD= 0.3	0.1 GD= 5.2	0.3	1029010	100
ME	1.3 SD= 3.2	0.4 GD= 3.8	1.2	91551	25
MN	2.6 SD= 2.8	1.1 GD= 5.6	2.7	1569314	107
MS	0.4 SD= 0.6	0.1 GD= 6.3	0.4	755718	75
MT	3.0 SD= 5.9	0.9 GD= 6.5	1.6	96115	33
NC	0.9 SD= 1.6	0.3 GD= 6.5	0.7	427278	166
ND	1.5 SD= 2.1	0.5 GD= 6.9	1.4	161151	69
NH	0.4 SD= 0.7	0.2 GD= 4.0	0.3	127074	26
NM	5.2 SD= 6.3	2.9 GD= 3.4	4.0	789544	69
NV	3.6 SD= 2.7	2.2 GD= 4.4	3.4	74650	25
NY	0.3 SD= 0.4	0.2 GD= 4.2	0.3	2718357	132
OH	0.6 SD= 0.5	0.4 GD= 3.7	0.5	1879178	84
OK	3.4 SD= 4.7	1.5 GD= 4.6	4.1	307776	32
OR	0.4 SD= 1.0	0.1 GD= 4.3	0.3	264941	57
PA	1.5 SD= 3.4	0.2 GD= 9.3	1.6	1044163	90
RI	0.4 SD= 0.7	0.2 GD= 4.1	0.6	169500	30*
SC	1.1 SD= 2.4	0.4 GD= 4.8	0.8	466325	105
SD	4.3 SD= 10.2	0.9 GD=10.5	3.6	211928	58
TN	0.9 SD= 1.5	0.5 GD= 3.8	0.5	1018193	50
UT	2.0 SD= 2.2	1.3 GD= 2.9	2.2	841997	99
VA	0.5 SD= 1.0	0.2 GD= 5.4	0.5	239184	102
VT	0.7 SD= 1.2	0.3 GD= 4.7	0.7	23760	11
WI	2.0 SD= 2.2	0.8 GD= 5.4	2.1	1120128	140
WY	7.6 SD= 8.3	4.4 GD= 3.5	7.1	61854	17
US	1.9 SD= 4.2	0.5 GD= 6.7	1.7	31444404	2510

SD equals standard deviation.
GD equals geometric standard deviation.
* Represents 30 individual wells but only 11 public water systems.

Figure 3.7. Average gross alpha concentrations in public groundwater supplies (1981-1982)

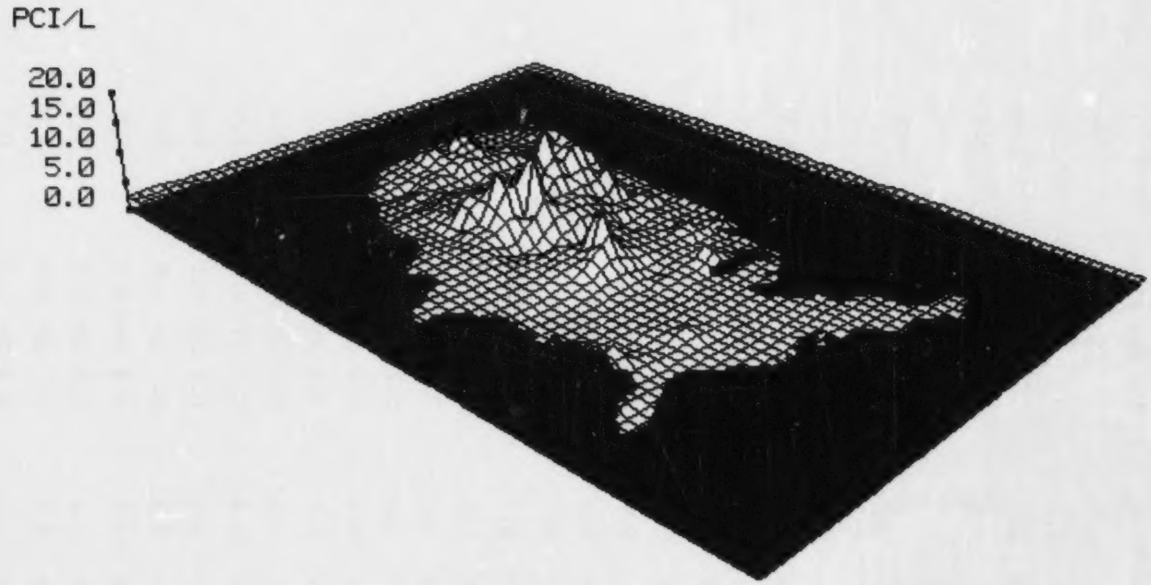
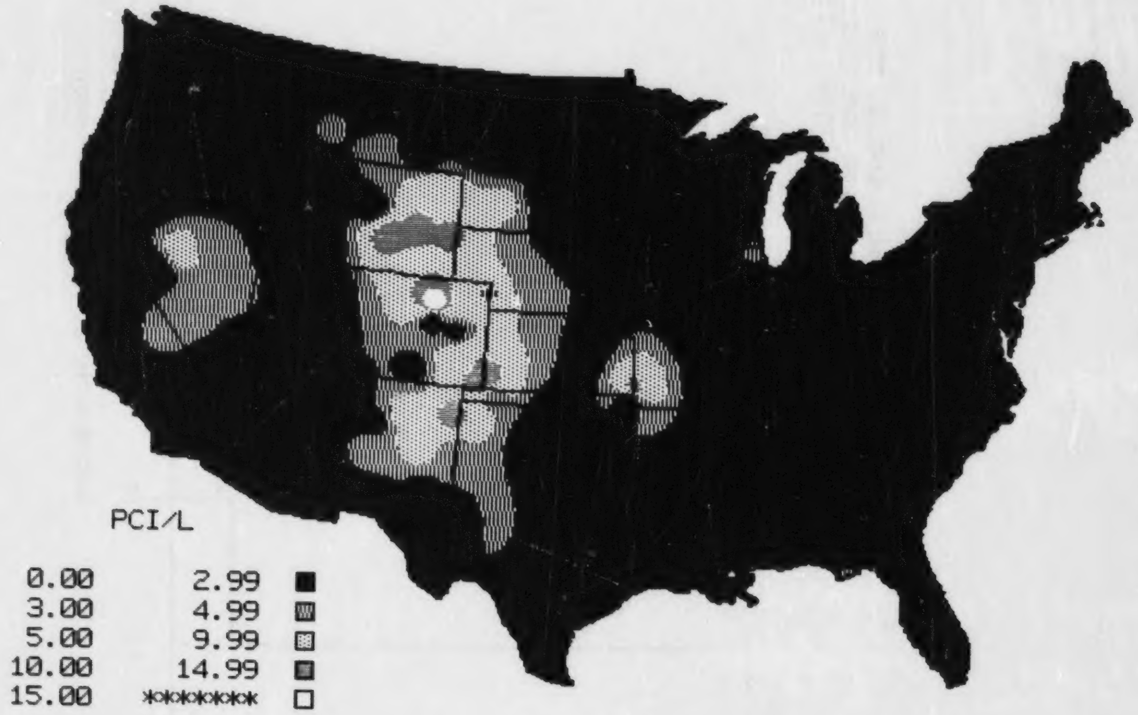


Figure 3.8. Average gross alpha concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 2.99 ■
3.00 4.99 ▥
5.00 9.99 ▦
10.00 14.99 ▩
15.00 ******* □

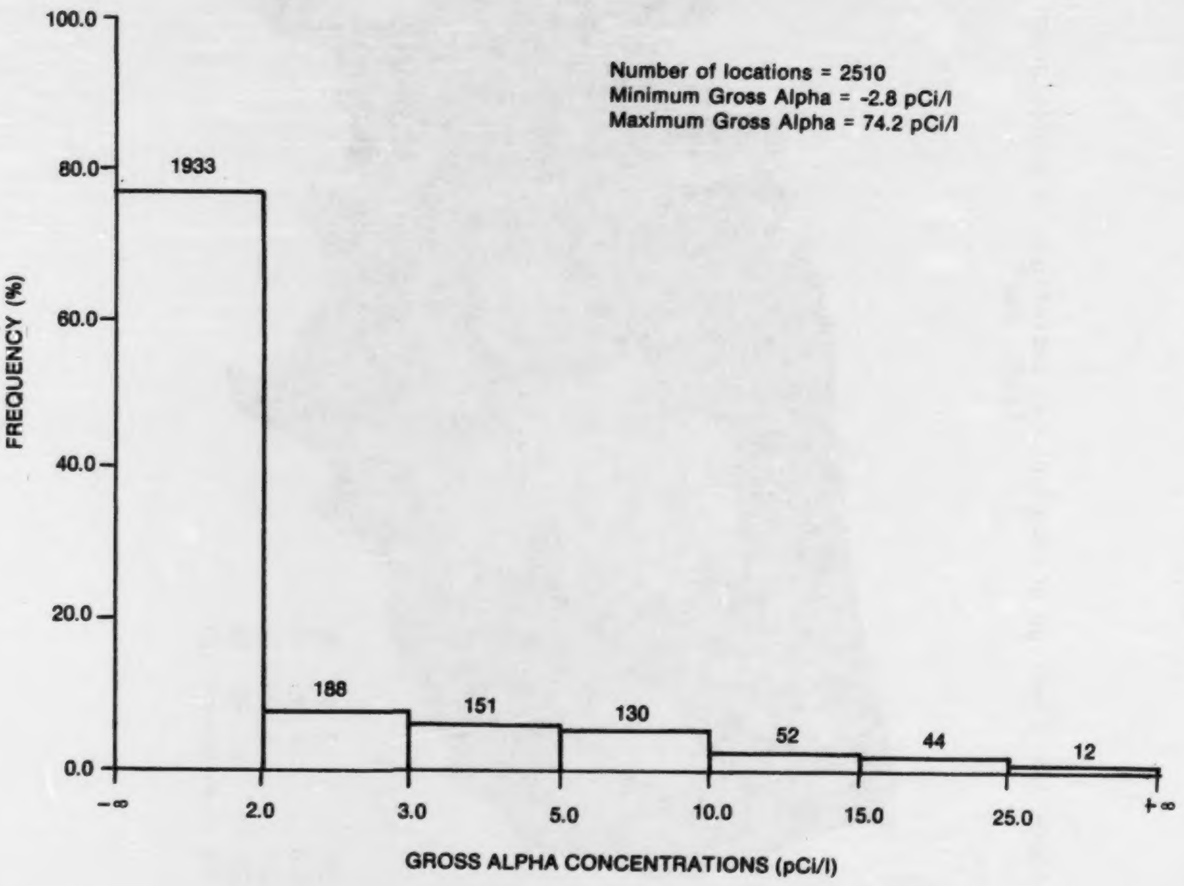


Figure 3.9. U.S. public groundwater systems: gross alpha concentrations

Table 3.4 Summary of gross beta concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	1.5 SD= 1.2	0.8 GD= 4.9	1.6	582910	74
AZ	3.2 SD= 2.7	2.2 GD= 3.1	1.9	1936898	65
CO	5.7 SD= 3.7	4.4 GD= 2.2	5.2	130754	37
DE	2.5 SD= 1.4	2.2 GD= 1.8	2.2	284082	36
FL	1.8 SD= 1.5	1.3 GD= 2.6	1.8	7585805	165
GA	1.7 SD= 1.4	1.0 GD= 3.9	1.7	539418	58
ID	3.6 SD= 3.8	1.9 GD= 4.9	2.8	463005	68
IL	10.8 SD= 10.3	6.0 GD= 3.8	11.2	2821132	148
IN	2.5 SD= 1.9	1.7 GD= 3.4	2.4	1075954	90
KS	5.0 SD= 3.3	3.9 GD= 2.2	2.9	382722	16
KY	2.5 SD= 2.0	1.9 GD= 2.1	3.2	152810	51
MA	1.9 SD= 2.7	1.3 GD= 2.4	1.6	1029010	100
ME	2.2 SD= 2.1	1.7 GD= 2.0	1.8	91551	25
MN	3.9 SD= 3.0	2.7 GD= 2.9	4.3	1569314	107
MS	2.4 SD= 1.9	1.6 GD= 3.2	2.1	755718	75
MT	3.3 SD= 2.9	1.6 GD= 5.3	2.7	96115	33
NC	4.2 SD= 3.4	3.1 GD= 2.2	4.1	427278	166
ND	5.5 SD= 3.9	3.9 GD= 3.0	4.8	161151	69
NH	2.0 SD= 1.7	1.6 GD= 1.9	1.8	127074	26
NM	3.5 SD= 3.1	1.6 GD= 6.8	4.2	789544	69
NV	4.9 SD= 3.1	3.6 GD= 2.5	4.9	74650	25
NY	1.7 SD= 1.7	1.3 GD= 2.1	1.3	2718357	132
OH	2.6 SD= 1.9	1.7 GD= 4.1	2.6	1879178	84
OK	3.4 SD= 2.5	2.3 GD= 3.4	3.8	307776	32
OR	2.5 SD= 2.7	1.7 GD= 2.4	2.1	264941	57
PA	2.0 SD= 1.5	1.4 GD= 2.9	2.2	1044163	90
RI	1.6 SD= 0.9	1.2 GD= 2.9	1.8	169500	30*
SC	2.8 SD= 2.3	2.0 GD= 2.8	3.2	466325	105
SD	7.9 SD= 6.2	4.0 GD= 6.5	4.1	211928	58
TN	1.8 SD= 1.5	1.3 GD= 2.4	1.5	1018193	50
UT	2.4 SD= 3.2	1.5 GD= 3.4	3.1	841997	99
VA	3.5 SD= 3.6	2.3 GD= 2.4	3.3	239184	102
VT	1.3 SD= 0.6	1.2 GD= 1.5	1.4	23760	11
WI	2.6 SD= 2.3	1.8 GD= 2.7	2.5	1120128	140
WY	3.5 SD= 2.6	2.4 GD= 2.6	2.3	61854	17
US	3.4 SD= 4.2	2.0 GD= 3.4	3.1	31444404	2510

SD equals standard deviation.
GD equals geometric standard deviation.
* Represents 30 individual wells but only 11 public water systems.

Figure 3.10. Average gross beta concentrations in public groundwater supplies (1981-1982)

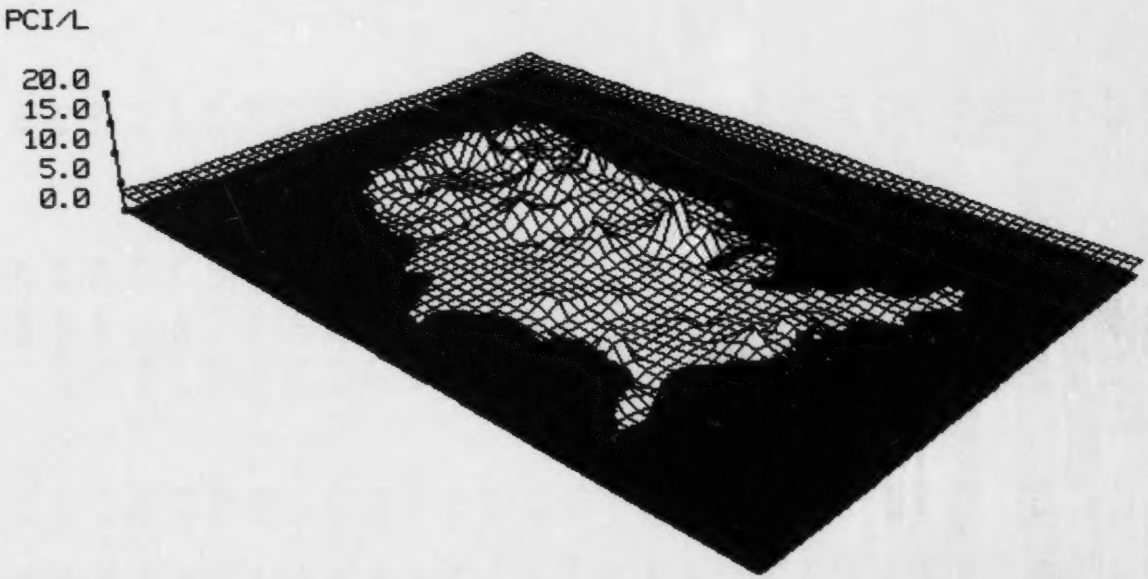
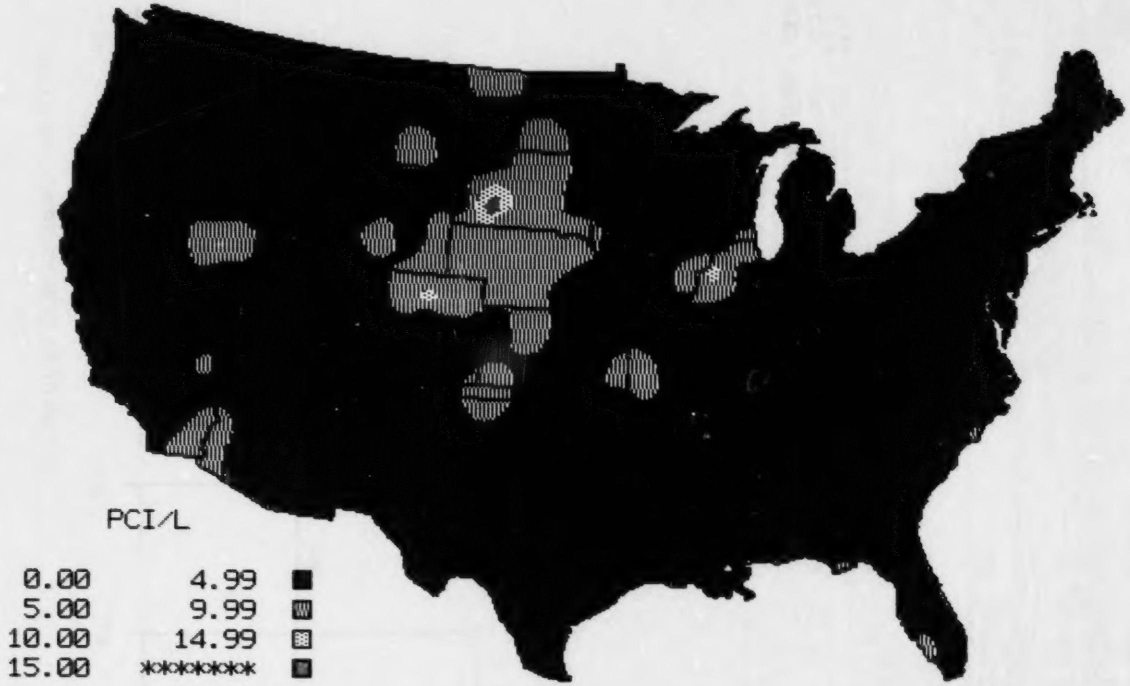


Figure 3.11. Average gross beta concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 4.99 ■
5.00 9.99 ▥
10.00 14.99 ▦
15.00 ******* ▩

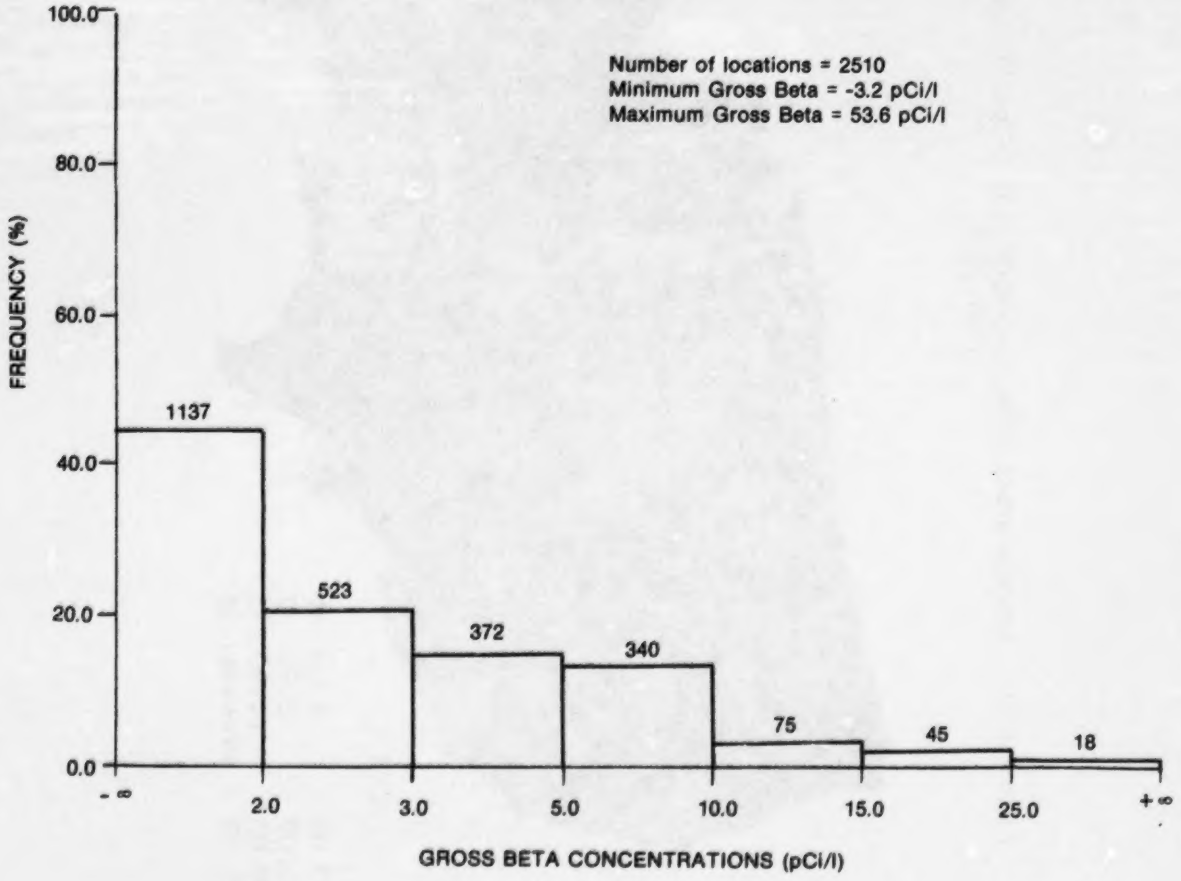


Figure 3.12. U.S. public groundwater systems: gross beta concentrations

Table 3.5 Summary of Ra-226 concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	0.6 SD= 0.3	0.5 GD= 1.7	0.5	19315	4
AZ	0.1 SD= 0.1	0.1 GD= 1.5	0.2	247382	20
CO	0.3 SD= 0.3	0.2 GD= 2.1	0.2	103804	25
DE	0.1 SD= 0.0	0.1 GD= 1.0	0.1	1200	1
FL	2.5 SD= 0.1	2.5 GD= 1.0	2.5	57582	3
GA	2.2 SD= 1.2	1.6 GD= 2.7	1.8	128992	13
ID	0.1 SD= 0.1	0.1 GD= 1.4	0.1	79573	13
IL	4.0 SD= 2.9	2.7 GD= 2.9	3.9	1528109	77
IN	0.9 SD= 0.8	0.6 GD= 3.0	0.5	58500	2
KS	2.3 SD= 2.3	1.2 GD= 3.6	1.3	48724	9
MA	0.2 SD= 0.0	0.2 GD= 1.0	0.2	13000	1
ME	0.6 SD= 0.7	0.3 GD= 5.4	0.3	7620	2
MN	2.8 SD= 1.9	2.0 GD= 2.8	2.9	324155	22
MS	0.2 SD= 0.1	0.2 GD= 1.7	0.2	36600	3
MT	0.2 SD= 0.2	0.2 GD= 1.9	0.2	13715	10
NC	2.8 SD= 1.9	1.8 GD= 3.5	3.7	22651	14
ND	0.2 SD= 0.2	0.2 GD= 1.9	0.2	27253	14
NH	0.4 SD= 0.0	0.4 GD= 1.0	0.4	1500	1
NM	0.3 SD= 0.5	0.2 GD= 2.2	0.3	223152	30
NV	0.2 SD= 0.1	0.2 GD= 1.8	0.2	44300	13
NY	0.1 SD= 0.0	0.1 GD= 1.0	0.1	5000	1
OH	1.7 SD= 0.0	1.7 GD= 1.0	1.7	8000	1
OK	0.2 SD= 0.2	0.2 GD= 2.1	0.2	85073	10
OR	0.1 SD= 0.0	0.1 GD= 1.0	0.1	1790	1
PA	0.6 SD= 0.6	0.4 GD= 2.8	0.7	126690	10
RI	0.1 SD= 0.0	0.1 GD= 1.0	0.1	11000	1
SC	1.7 SD= 1.9	0.9 GD= 4.0	1.5	17728	6
SD	1.7 SD= 2.0	0.7 GD= 4.6	2.0	37769	22
TN	1.5 SD= 1.8	0.7 GD= 6.1	0.9	67500	3
UT	0.3 SD= 0.4	0.2 GD= 2.4	0.2	255030	17
VA	1.4 SD= 1.2	1.1 GD= 2.2	1.1	13507	6
VT	1.0 SD= 0.0	1.0 GD= 1.0	1.0	2000	1
WI	2.3 SD= 1.7	1.5 GD= 3.0	2.8	221640	35
WY	0.6 SD= 0.8	0.3 GD= 3.2	0.6	44337	12
US	1.7 SD= 2.2	0.6 GD= 4.5	2.2	3884191	403

SD equals standard deviation.
GD equals geometric standard deviation.

Figure 3.13. Average Ra-226 concentrations in public groundwater supplies (1981-1982)

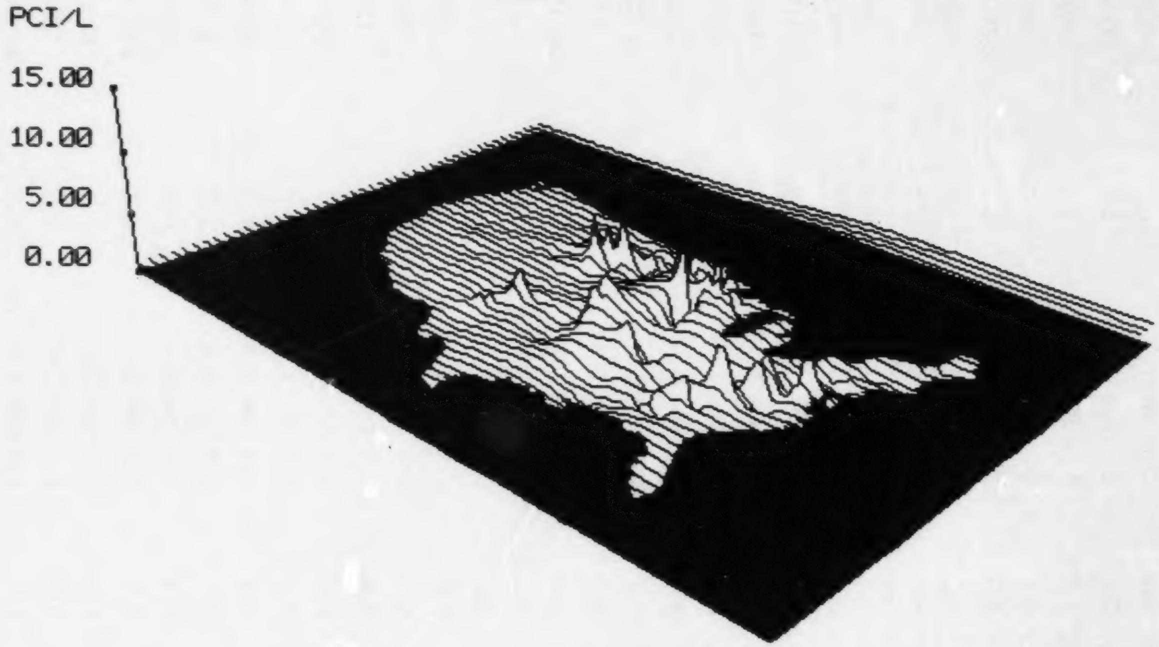
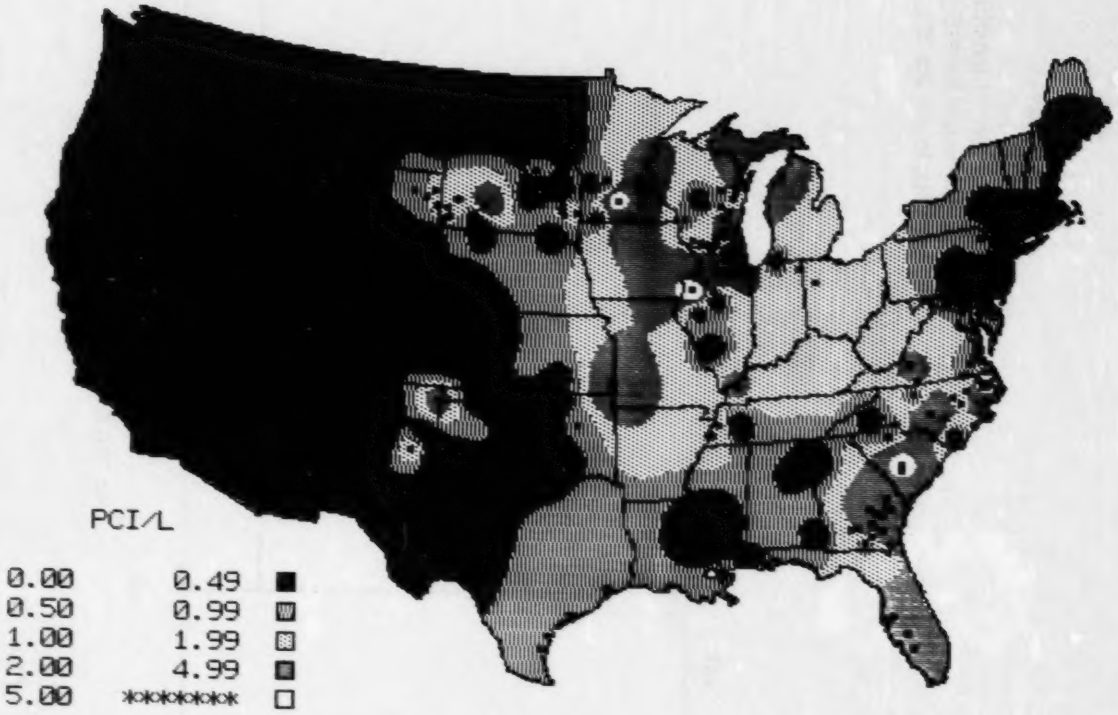

PCI/L
15.00
10.00
5.00
0.00

Figure 3.14. Average Ra-226 concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 0.49 ■
0.50 0.99 ▥
1.00 1.99 ▩
2.00 4.99 ▦
5.00 ******* □

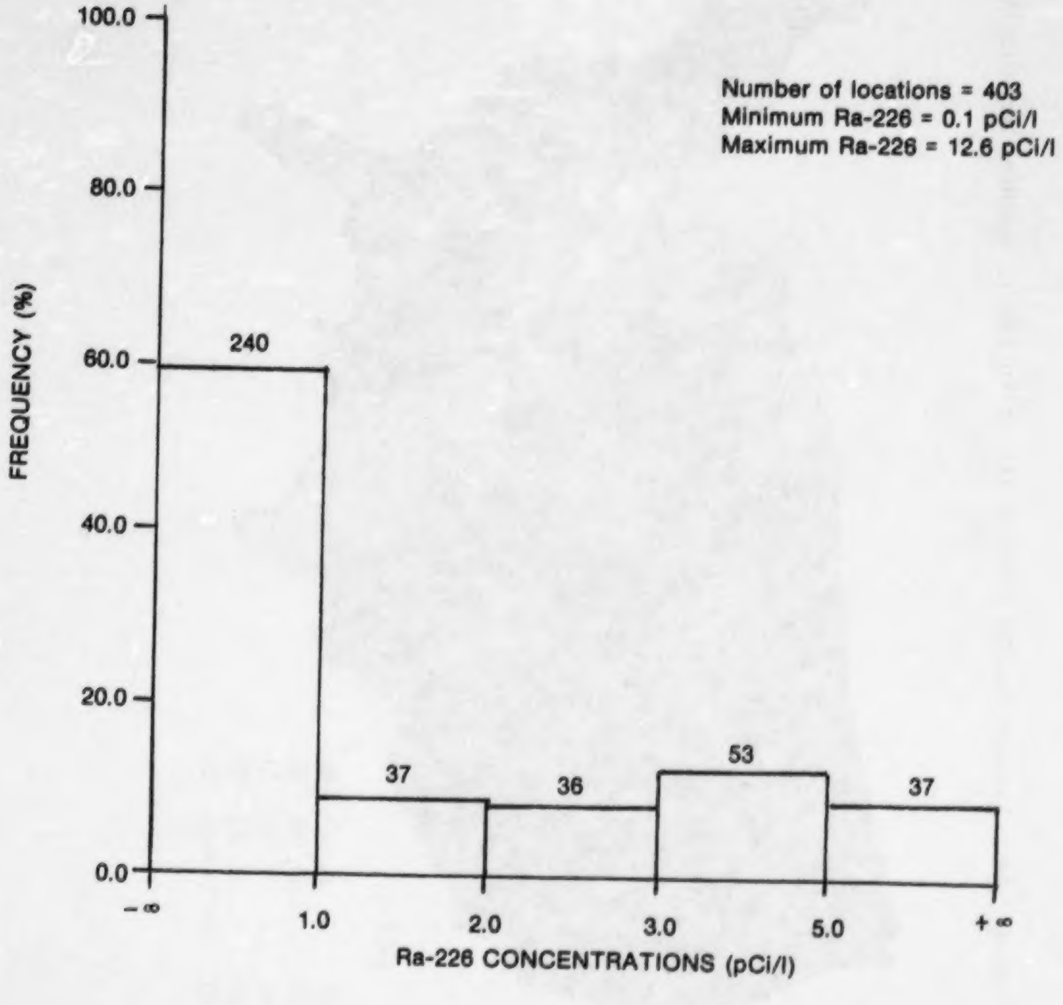


Figure 3.15. U.S. public groundwater systems: Ra-226 concentrations

Table 3.6 Summary of Ra-228 concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
GA	0.3 SD= 0.4	0.1 GD=10.5	0.6	31327	4
IL	4.5 SD= 2.4	3.5 GD= 2.8	4.9	1103649	56
KS	0.8 SD= 0.2	0.8 GD= 1.3	0.8	6194	3
MN	2.2 SD= 1.3	1.7 GD= 2.4	1.8	188981	13
NC	4.5 SD= 4.1	2.6 GD= 3.7	3.8	20088	9
SC	3.9 SD= 0.0	3.9 GD= 1.0	3.9	1918	1
SD	3.0 SD= 4.4	0.6 GD=14.2	3.4	9899	5
TN	6.1 SD= 0.0	6.1 GD= 1.0	6.1	15000	1
VA	0.6 SD= 0.6	0.4 GD= 3.1	0.2	4227	2
WI	2.7 SD= 1.3	2.2 GD= 2.2	3.1	94277	12
WY	0.0 SD= 0.0	0.0 GD= 1.0	0.0	4500	1
US	3.6 SD= 2.7	2.1 GD= 4.5	4.3	1480060	107

SD equals standard deviation.
GD equals geometric standard deviation.

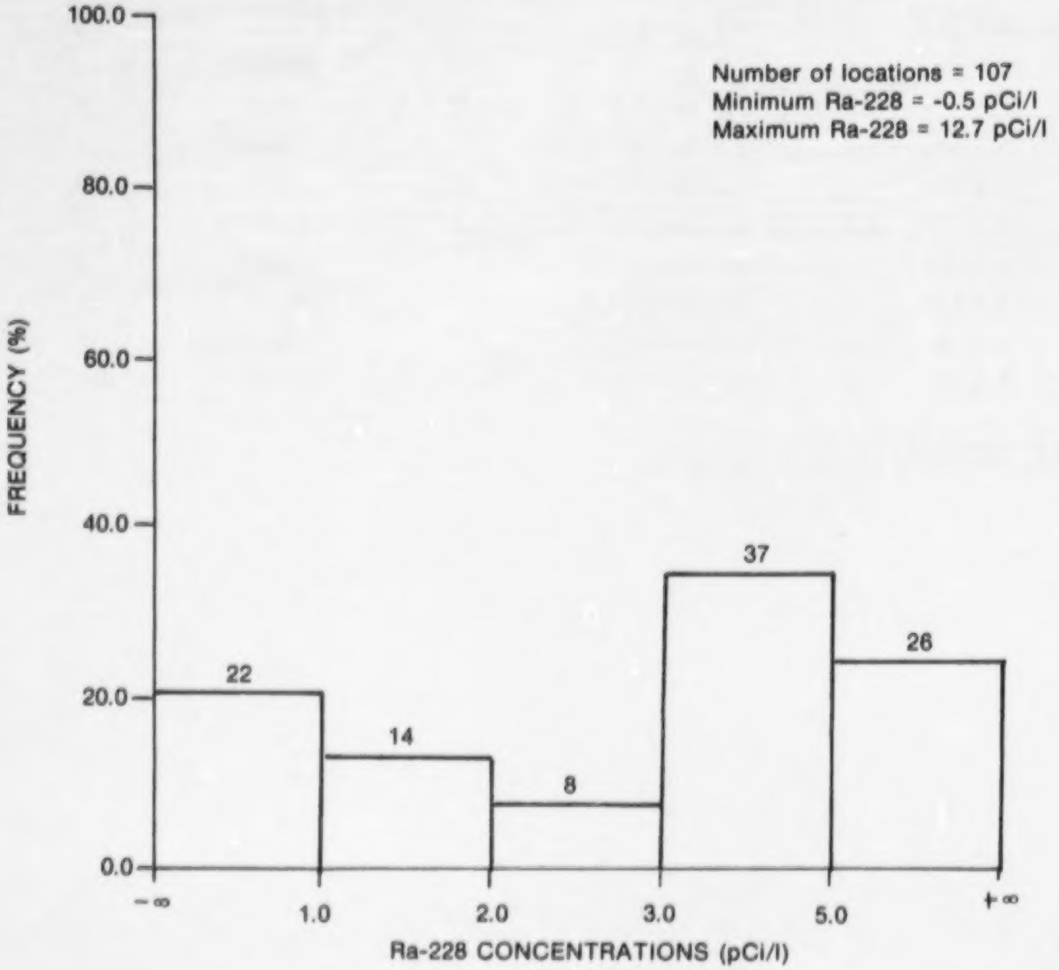


Figure 3.16. U.S. public groundwater systems: Ra-228 concentrations

3.6 U.S. Total Ra Results

Total Ra concentrations are shown in Table 3.7 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. A frequency distribution of total Ra concentrations is shown in Figure 3.17.

3.7 U.S. Ra-226/Ra-228 Ratio Results

Ra-226/Ra-228 ratios are shown in Table 3.8 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. A frequency distribution of Ra-226/Ra-228 ratios is shown in Figure 3.18.

3.8 U.S. U-234 Results

U-234 concentrations are shown in Table 3.9 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. Figures 3.19 and 3.20 display U-234 concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of U-234 concentrations is shown in Figure 3.21.

3.9 U.S. U-238 Results

U-238 concentrations are shown in Table 3.10 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. Figures 3.22 and 3.23 display U-238 concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of U-238 concentrations is shown in Figure 3.24.

3.10 U.S. Total U Results

Total U concentrations are shown in Table 3.11 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means. Figures 3.25 and 3.26 display total U concentrations by topographic mapping and contour mapping, respectively. A frequency distribution of total U concentrations is shown in Figure 3.27.

Table 3.7 Summary of total Ra concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
GA	3.6 SD= 1.1	3.5 GD= 1.3	3.5	31327	4
IL	10.0 SD= 4.3	9.0 GD= 1.7	10.1	1079813	53
KS	6.1 SD= 0.3	6.1 GD= 1.0	6.2	6194	3
MN	6.4 SD= 2.3	6.0 GD= 1.4	5.3	152981	10
NC	9.0 SD= 5.1	7.8 GD= 1.8	7.9	15990	7
SD	7.8 SD= 4.3	6.9 GD= 1.7	9.6	9899	5
TN	9.7 SD= 0.0	9.7 GD= 1.0	9.7	15000	1
VA	4.7 SD= 0.0	4.7 GD= 1.0	4.7	227	1
WI	6.9 SD= 1.9	6.6 GD= 1.4	7.6	94277	12
WY	2.9 SD= 0.0	2.9 GD= 1.0	2.9	4500	1
US	3.5 SD= 4.1	7.6 GD= 1.7	9.2	1410208	97

SD equals standard deviation.
GD equals geometric standard deviation.

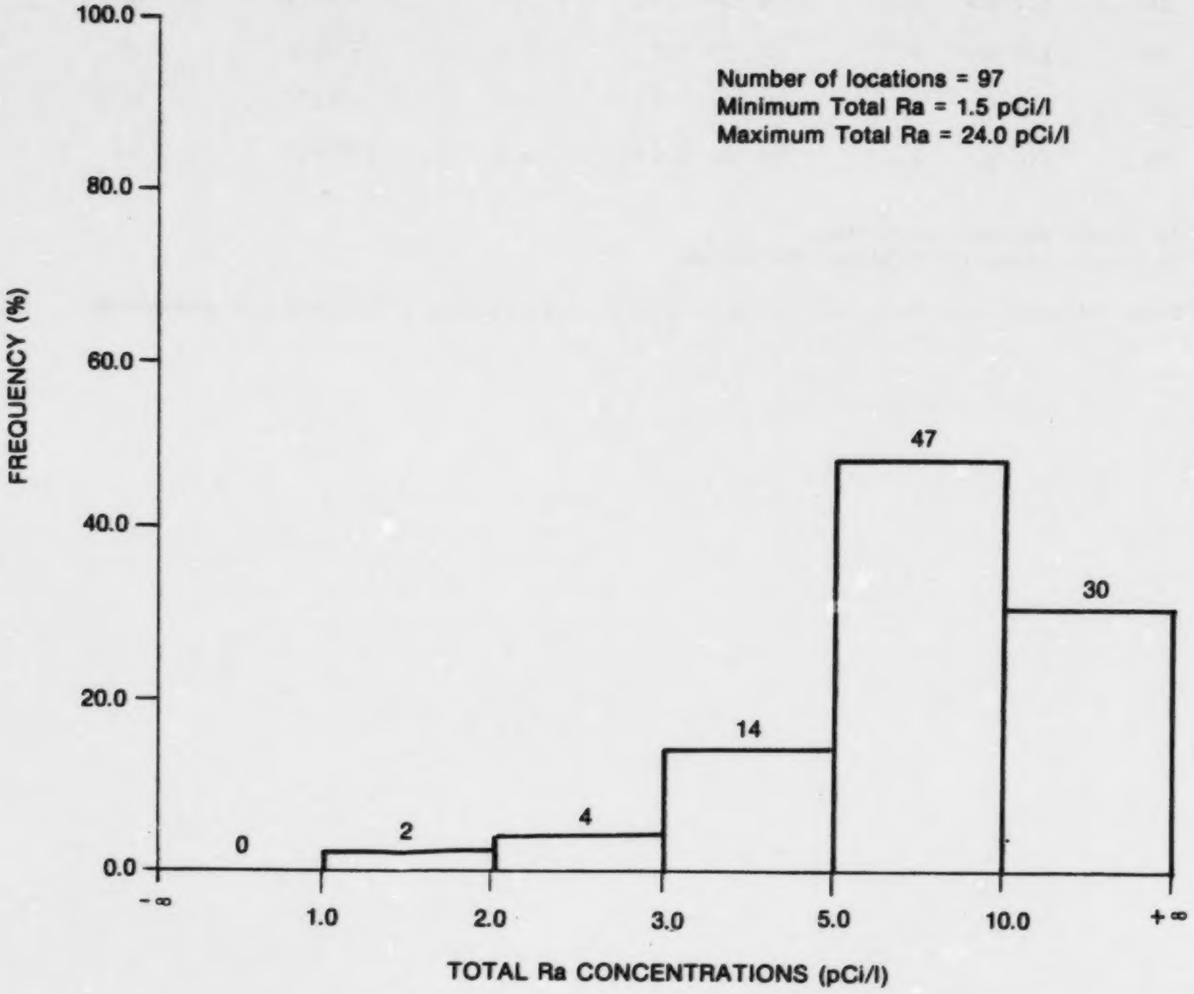


Figure 3.17. U.S. public groundwater systems: total Ra concentrations

Table 3.8 Summary of Ra-226/Ra-228 ratios in public groundwater systems

STATE	ARITHMETIC MEAN	GEOMETRIC MEAN	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
IL	1.3 SD= 0.7	1.2 GD= 1.6	1.1	1079813	53
MN	1.8 SD= 0.7	1.7 GD= 1.5	2.2	152981	10
WI	2.4 SD= 2.2	1.9 GD= 1.9	1.8	94277	12
US	2.1 SD= 2.4	1.5 GD= 2.1	1.4	1397410	93

SD equals standard deviation.
GD equals geometric standard deviation.

Note: States having less than 10 locations for calculating a mean are not presented.

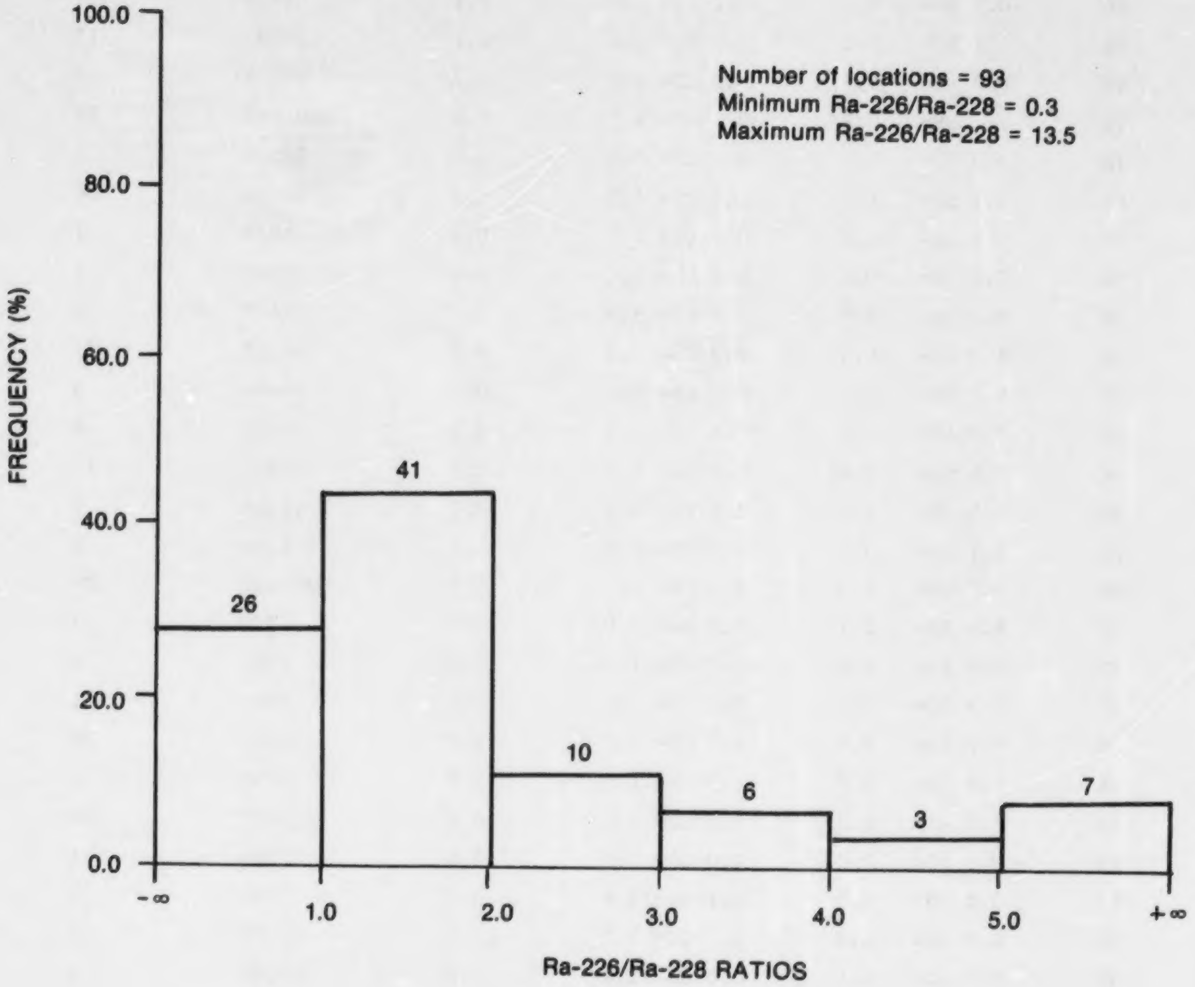


Figure 3.18. U.S. public groundwater systems: Ra-226/Ra-228 ratios

Table 3.9 Summary of U-234 concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	0.1 SD= 0.1	0.0 GD= 4.5	0.1	19315	4
AZ	3.8 SD= 3.2	3.0 GD= 1.8	3.6	233426	18
CO	9.2 SD= 7.9	6.5 GD= 2.5	8.3	93904	21
DE	0.1 SD= 0.0	0.1 GD= 1.0	0.1	1200	1
FL	0.1 SD= 0.0	0.1 GD= 1.0	0.1	8569	1
GA	0.1 SD= 0.2	0.0 GD= 4.6	0.1	128992	13
ID	6.2 SD= 4.3	5.0 GD= 2.0	6.7	79573	13
IL	1.2 SD= 0.9	0.7 GD= 4.2	1.4	1501553	75
IN	0.3 SD= 0.3	0.2 GD= 3.1	0.4	58500	2
KS	1.7 SD= 1.8	0.8 GD= 4.5	1.8	65025	10
KY	0.1 SD= 0.0	0.1 GD= 1.0	0.1	1990	1
MA	0.4 SD= 0.0	0.4 GD= 1.0	0.4	13000	1
ME	9.6 SD= 9.6	6.8 GD= 3.5	5.2	7620	2
MN	1.0 SD= 1.6	0.3 GD= 5.5	0.8	340155	23
MS	0.0 SD= 0.1	0.0 GD= 3.8	0.0	36600	3
MT	7.0 SD= 6.5	3.5 GD= 5.1	4.9	8115	6
NC	1.8 SD= 3.4	0.3 GD= 8.5	0.7	22651	14
ND	3.5 SD= 4.0	1.6 GD= 5.0	3.7	16508	7
NH	1.1 SD= 0.0	1.1 GD= 1.0	1.1	1500	1
NM	5.9 SD= 7.5	4.1 GD= 2.1	4.9	223152	30
NV	4.0 SD= 2.1	3.5 GD= 2.0	4.8	7300	3
NY	0.0 SD= 0.0	0.0 GD= 1.0	0.0	5000	1
OH	0.3 SD= 0.0	0.3 GD= 1.0	0.3	8000	1
OK	7.1 SD= 7.9	4.2 GD= 3.1	11.8	85073	10
OR	2.8 SD= 0.0	2.8 GD= 1.0	2.8	1790	1
PA	5.0 SD= 3.2	4.2 GD= 1.8	4.8	126690	10
RI	0.0 SD= 0.0	0.0 GD= 1.0	0.0	11000	1
SC	3.2 SD= 4.9	0.1 GD=28.9	3.6	17728	6
SD	6.0 SD= 6.5	2.1 GD= 7.2	11.9	15708	10
TN	0.1 SD= 0.1	0.0 GD= 3.8	0.0	67500	3
UT	3.2 SD= 3.0	2.7 GD= 1.7	2.4	255030	17
VA	0.7 SD= 0.9	0.1 GD=12.2	0.4	12707	5
VT	0.0 SD= 0.0	0.0 GD= 1.0	0.0	2000	1
WI	2.0 SD= 1.3	1.6 GD= 1.9	2.0	221640	35
WY	7.1 SD= 5.9	5.1 GD= 2.3	5.5	44337	12
US	3.3 SD= 4.8	1.1 GD= 7.0	2.4	3742851	362

SD equals standard deviation.
GD equals geometric standard deviation.

Figure 3.19. Average U-234 concentrations in public groundwater supplies (1981-1982)

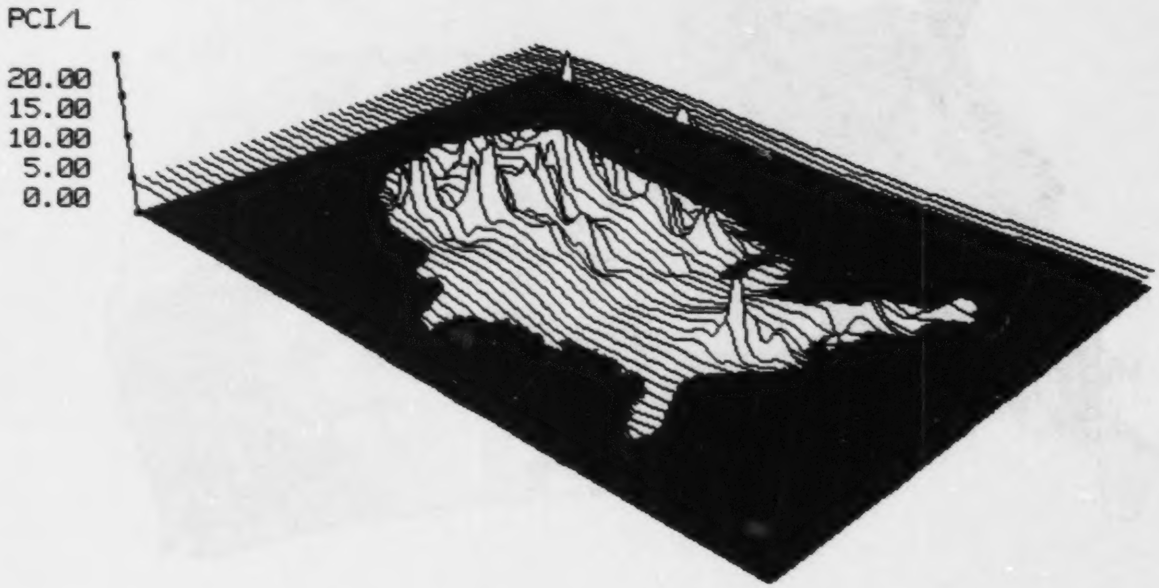
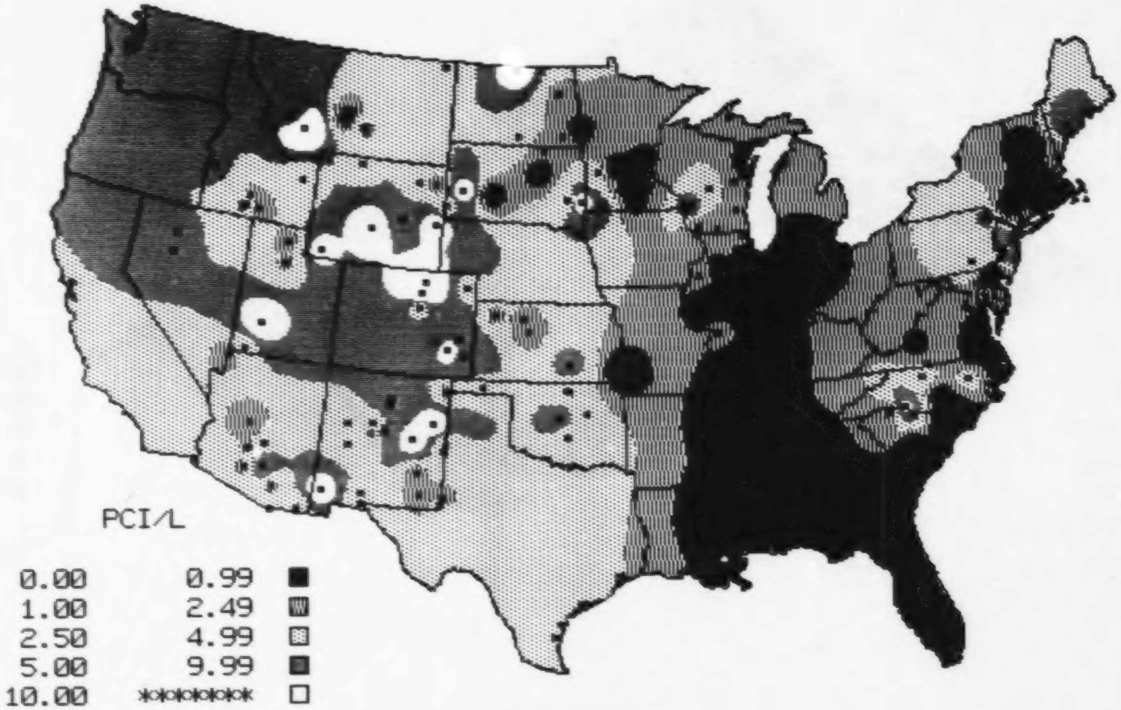

PCI/L
20.00
15.00
10.00
5.00
0.00

Figure 3.20. Average U-234 concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 0.99 ■
1.00 2.49 ▥
2.50 4.99 ▩
5.00 9.99 ■
10.00 ******* □

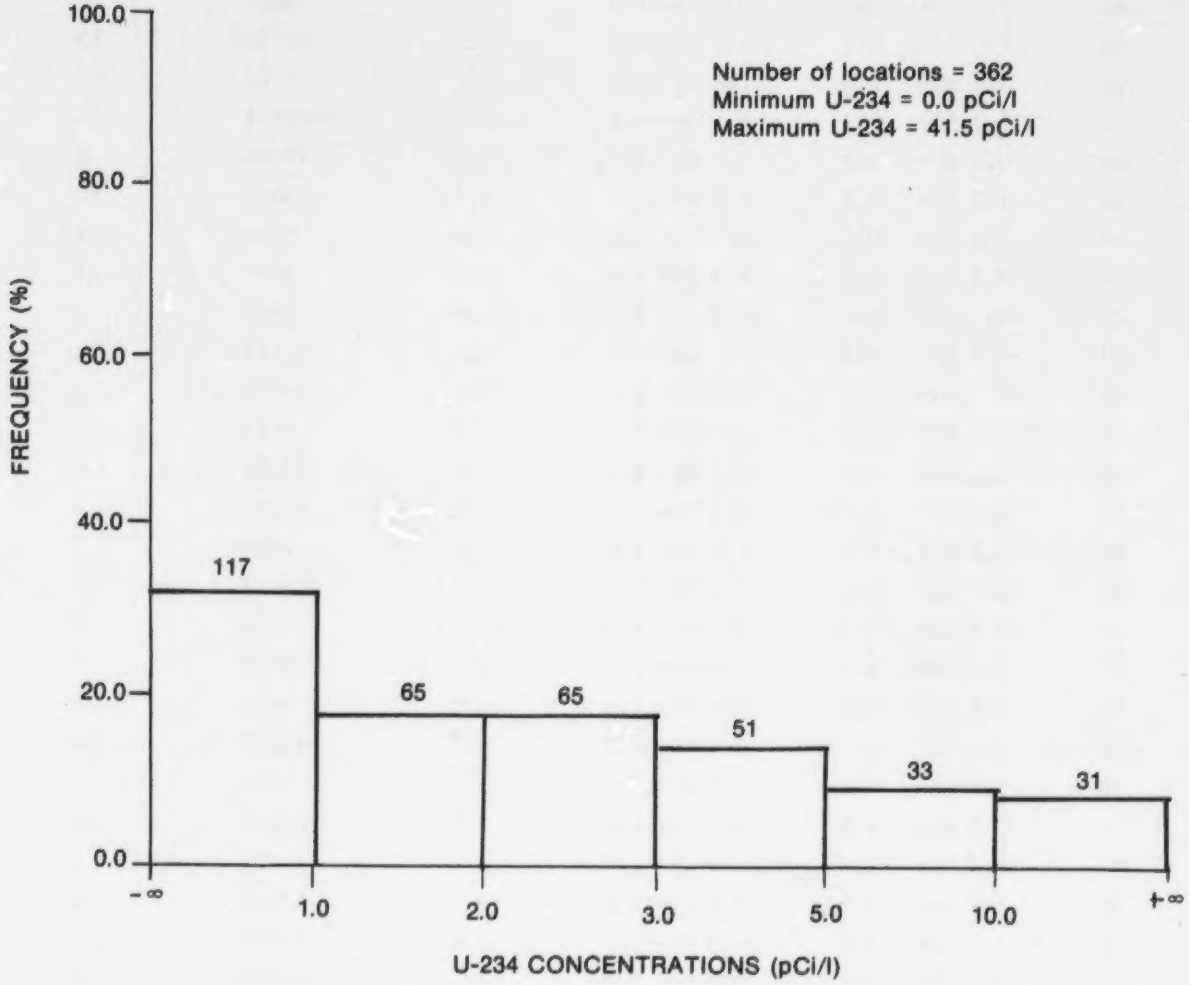


Figure 3.21. U.S. public groundwater systems: U-234 concentrations

Table 3.10 Summary of U-238 concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	0.0 SD= 0.0	0.0 GD= 3.2	0.0	19315	4
AZ	2.1 SD= 2.4	1.4 GD= 2.7	2.1	233426	18
CO	6.7 SD= 6.4	4.6 GD= 2.6	6.0	93904	21
DE	0.0 SD= 0.0	0.0 GD= 1.0	0.0	1200	1
FL	0.1 SD= 0.0	0.1 GD= 1.0	0.1	8569	1
GA	0.1 SD= 0.2	0.0 GD= 4.5	0.1	128992	13
ID	3.5 SD= 2.4	2.6 GD= 2.3	3.8	79573	13
IL	0.2 SD= 0.3	0.1 GD= 4.2	0.2	1501553	75
IN	0.2 SD= 0.3	0.1 GD=13.6	0.3	58500	2
KS	1.2 SD= 1.5	0.2 GD=11.8	1.3	65025	10
KY	0.0 SD= 0.0	0.0 GD= 1.0	0.0	1990	1
MA	0.3 SD= 0.0	0.3 GD= 1.0	0.3	13000	1
ME	9.1 SD= 8.8	6.5 GD= 3.3	5.0	7620	2
MN	0.7 SD= 1.3	0.1 GD= 8.2	0.5	340155	23
MS	0.1 SD= 0.1	0.0 GD= 3.8	0.1	36600	3
MT	4.0 SD= 3.5	2.0 GD= 5.3	2.9	8115	6
NC	1.0 SD= 1.9	0.1 GD= 9.5	0.4	22651	14
ND	2.5 SD= 2.9	0.8 GD= 9.5	2.6	16508	7
NH	1.1 SD= 0.0	1.1 GD= 1.0	1.1	1500	1
NM	2.8 SD= 2.6	2.0 GD= 2.4	2.5	223152	30
NV	2.0 SD= 1.3	1.6 GD= 2.4	2.2	7300	3
NY	0.0 SD= 0.0	0.0 GD= 1.0	0.0	5000	1
OH	0.1 SD= 0.0	0.1 GD= 1.0	0.1	8000	1
OK	3.9 SD= 4.7	2.2 GD= 3.7	6.7	85073	10
OR	1.9 SD= 0.0	1.9 GD= 1.0	1.9	1790	1
PA	2.5 SD= 1.8	2.0 GD= 1.9	2.7	126690	10
RI	0.0 SD= 0.0	0.0 GD= 1.0	0.0	11000	1
SC	1.9 SD= 2.8	0.1 GD=22.0	2.0	17728	6
SD	2.2 SD= 1.9	0.6 GD=11.7	3.7	15708	10
TN	0.0 SD= 0.1	0.0 GD= 3.8	0.0	67500	3
UT	1.9 SD= 1.7	1.5 GD= 2.0	1.5	255030	17
VA	0.4 SD= 0.6	0.1 GD= 8.4	0.1	12707	5
VT	0.0 SD= 0.0	0.0 GD= 1.0	0.0	2000	1
WI	0.4 SD= 0.8	0.2 GD= 3.1	0.3	221640	35
WY	4.1 SD= 3.7	2.7 GD= 2.7	3.2	44337	12
US	1.7 SD= 3.0	0.4 GD= 8.9	1.1	3742851	362

SD equals standard deviation.
GD equals geometric standard deviation.

Figure 3.22. Average U-238 concentrations in public groundwater supplies (1981-1982)

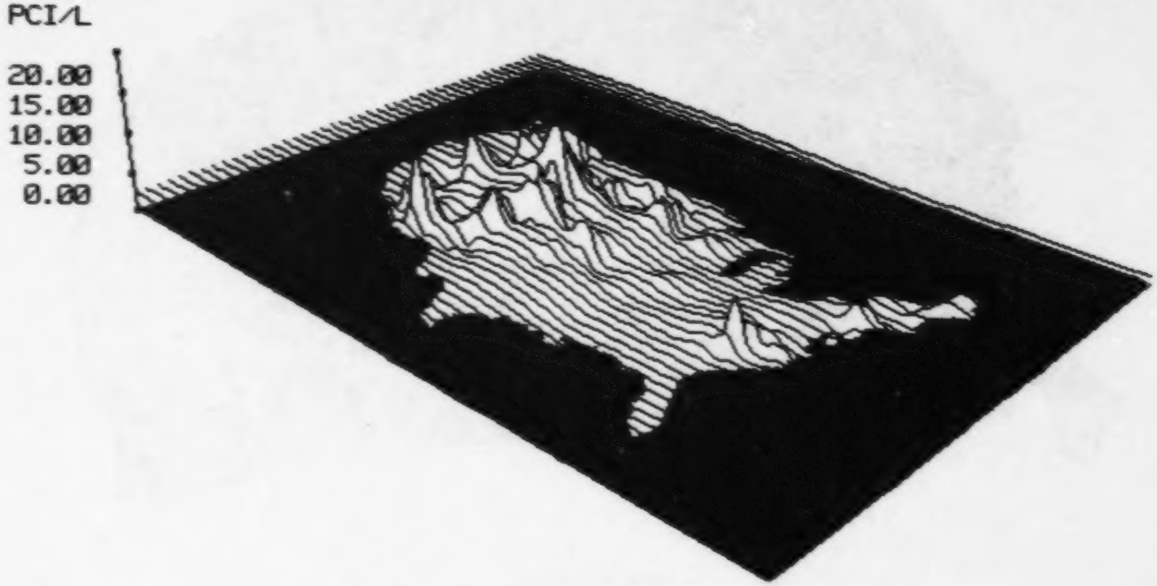
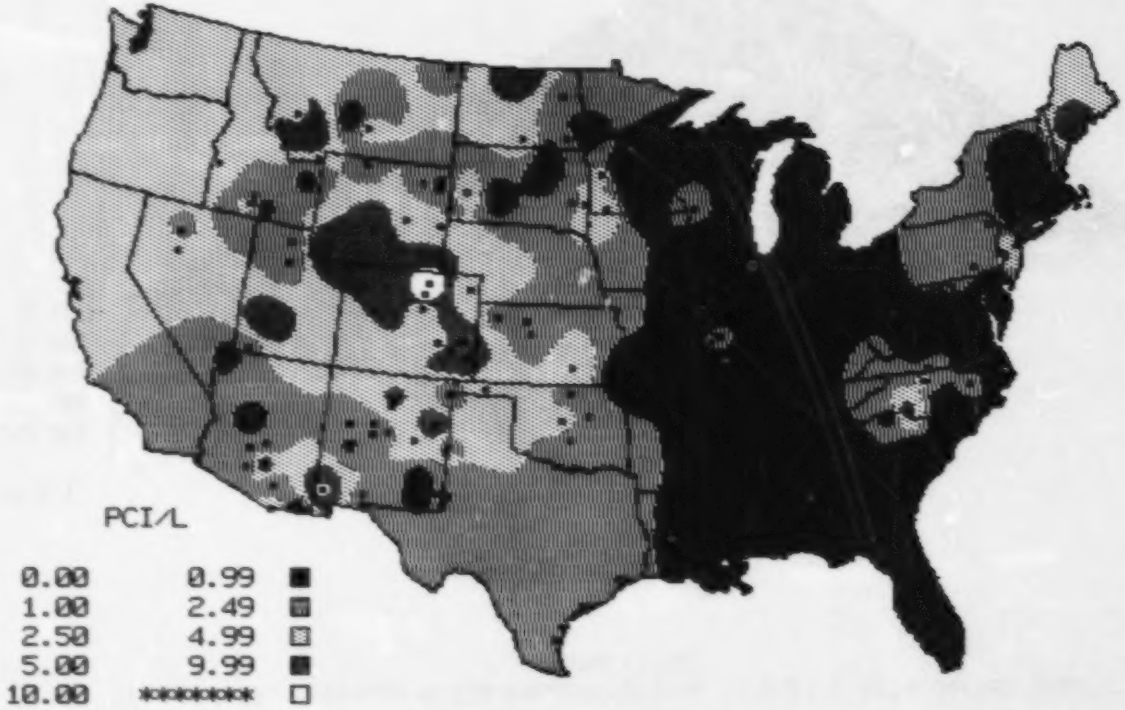

PCI/L
20.00
15.00
10.00
5.00
0.00

Figure 3.23. Average U-238 concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 0.99 ■
1.00 2.49 ▨
2.50 4.99 ▨
5.00 9.99 ■
10.00 ******* □

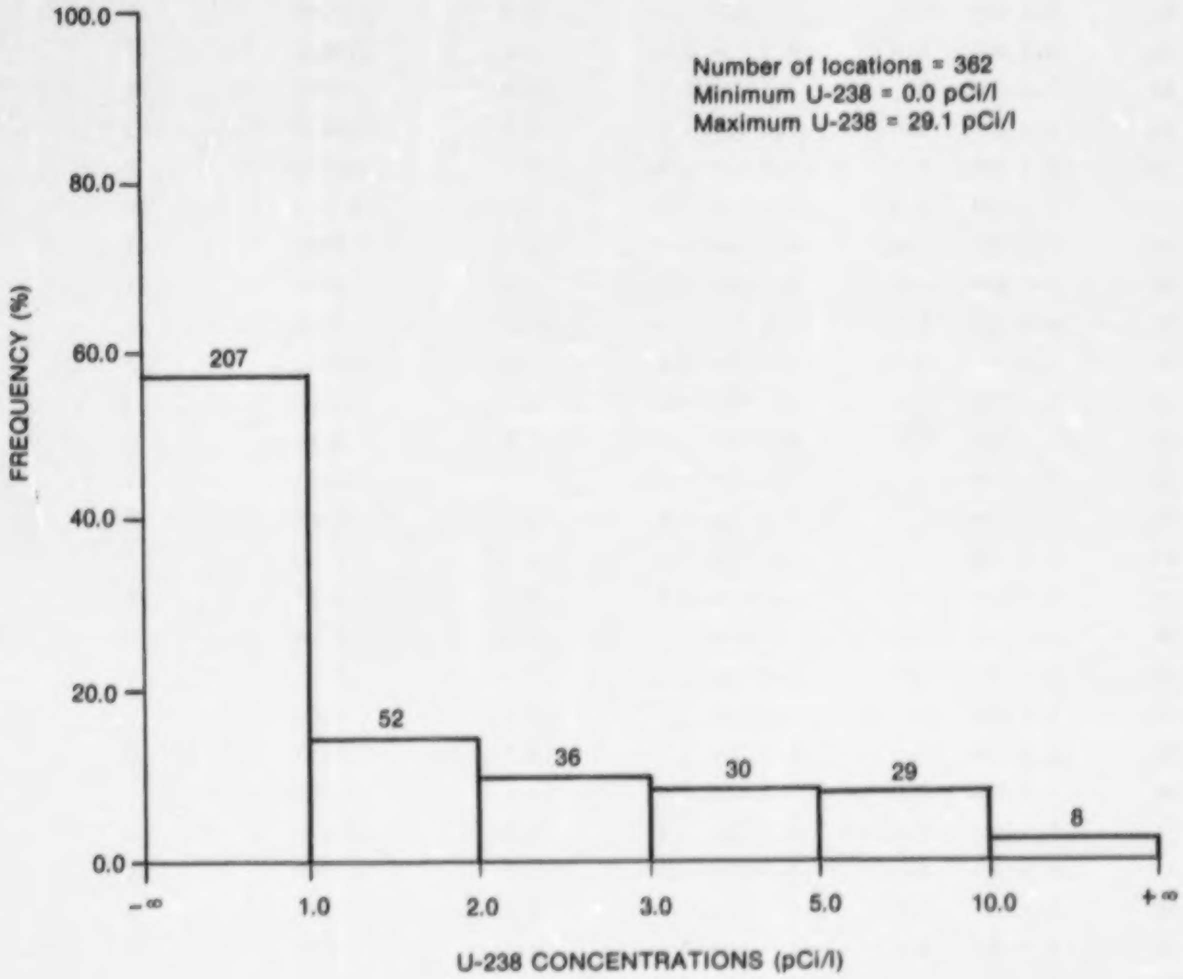


Figure 3.24. U.S. public groundwater systems: U-238 concentrations

Table 3.11 Summary of total U concentrations in public groundwater systems

STATE	ARITHMETIC MEAN (pCi/l)	GEOMETRIC MEAN (pCi/l)	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AL	0.1 SD= 0.1	0.0 GD= 5.5	0.1	19315	4
AZ	5.9 SD= 5.5	4.5 GD= 2.0	5.6	233426	18
CO	16.0 SD= 14.4	11.2 GD= 2.5	14.3	93904	21
DE	0.1 SD= 0.0	0.1 GD= 1.0	0.1	1200	1
FL	0.2 SD= 0.0	0.2 GD= 1.0	0.2	8569	1
GA	0.2 SD= 0.4	0.0 GD= 6.4	0.2	128992	13
ID	9.6 SD= 6.6	7.7 GD= 2.1	10.4	79573	13
IL	1.4 SD= 1.0	0.9 GD= 4.2	1.5	1501553	75
IN	0.5 SD= 0.6	0.3 GD= 4.7	0.8	58500	2
KS	2.9 SD= 3.3	1.1 GD= 5.7	3.1	65025	10
KY	0.1 SD= 0.0	0.1 GD= 1.0	0.1	1990	1
MA	0.7 SD= 0.0	0.7 GD= 1.0	0.7	13000	1
ME	18.6 SD= 18.5	13.3 GD= 3.4	10.1	7620	2
MN	1.7 SD= 2.9	0.4 GD= 6.6	1.2	340155	23
MS	0.1 SD= 0.1	0.1 GD= 4.8	0.1	36600	3
MT	11.0 SD= 9.9	5.6 GD= 5.1	7.8	8115	6
NC	2.8 SD= 5.2	0.4 GD= 9.8	1.0	22651	14
ND	5.9 SD= 6.9	2.5 GD= 5.9	6.3	16508	7
NH	2.2 SD= 0.0	2.2 GD= 1.0	2.2	1500	1
NM	8.8 SD= 9.6	6.2 GD= 2.2	7.5	223152	30
NV	6.1 SD= 3.4	5.2 GD= 2.1	7.0	7300	3
NY	0.0 SD= 0.0	0.0 GD= 1.0	0.0	5000	1
OH	0.4 SD= 0.0	0.4 GD= 1.0	0.4	8000	1
OK	11.0 SD= 12.5	6.5 GD= 3.2	18.5	85073	10
OR	4.7 SD= 0.0	4.7 GD= 1.0	4.7	1790	1
PA	7.5 SD= 4.9	6.3 GD= 1.8	7.5	126690	10
RI	0.0 SD= 0.0	0.0 GD= 1.0	0.0	11000	1
SC	5.1 SD= 7.8	0.2 GD=36.0	5.6	17728	6
SD	8.1 SD= 8.4	2.9 GD= 7.4	15.5	15708	10
TN	0.1 SD= 0.1	0.1 GD= 4.8	0.1	67500	3
UT	5.1 SD= 4.6	4.3 GD= 1.7	3.8	255030	17
VA	1.0 SD= 1.6	0.2 GD=15.0	0.5	12707	5
VT	0.0 SD= 0.0	0.0 GD= 1.0	0.0	2000	1
WI	2.4 SD= 1.9	1.9 GD= 2.0	2.3	221640	35
WY	11.1 SD= 9.5	7.8 GD= 2.4	8.7	44337	12
US	5.1 SD= 7.6	1.5 GD= 7.7	3.5	3742851	362

SD equals standard deviation.
GD equals geometric standard deviation.

Figure 3.25. Average total uranium concentrations in public groundwater supplies (1981-1982)

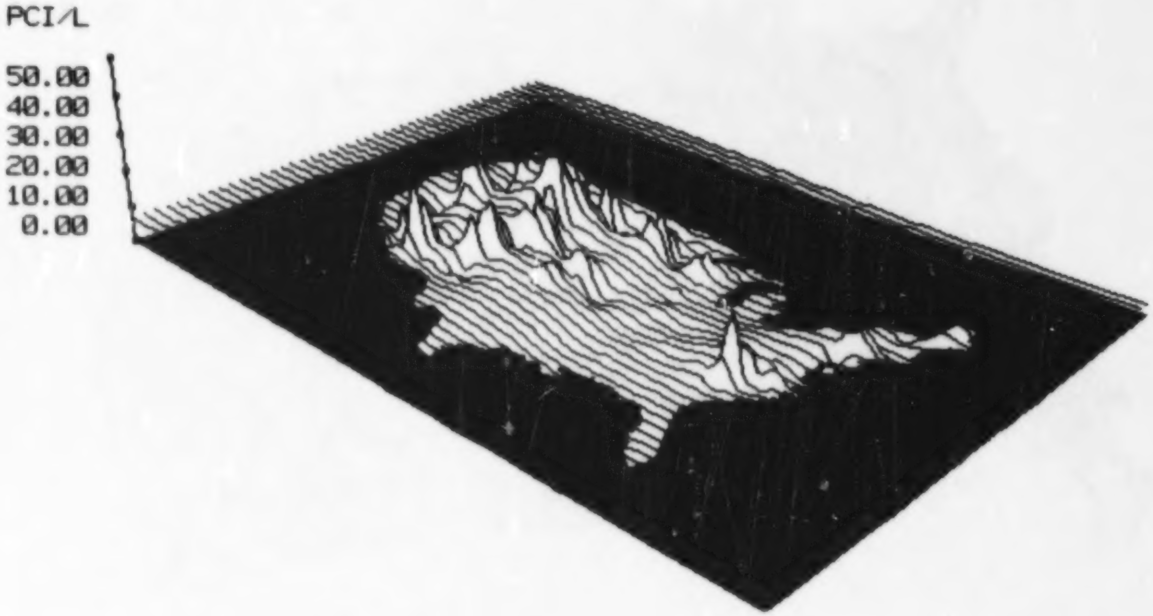
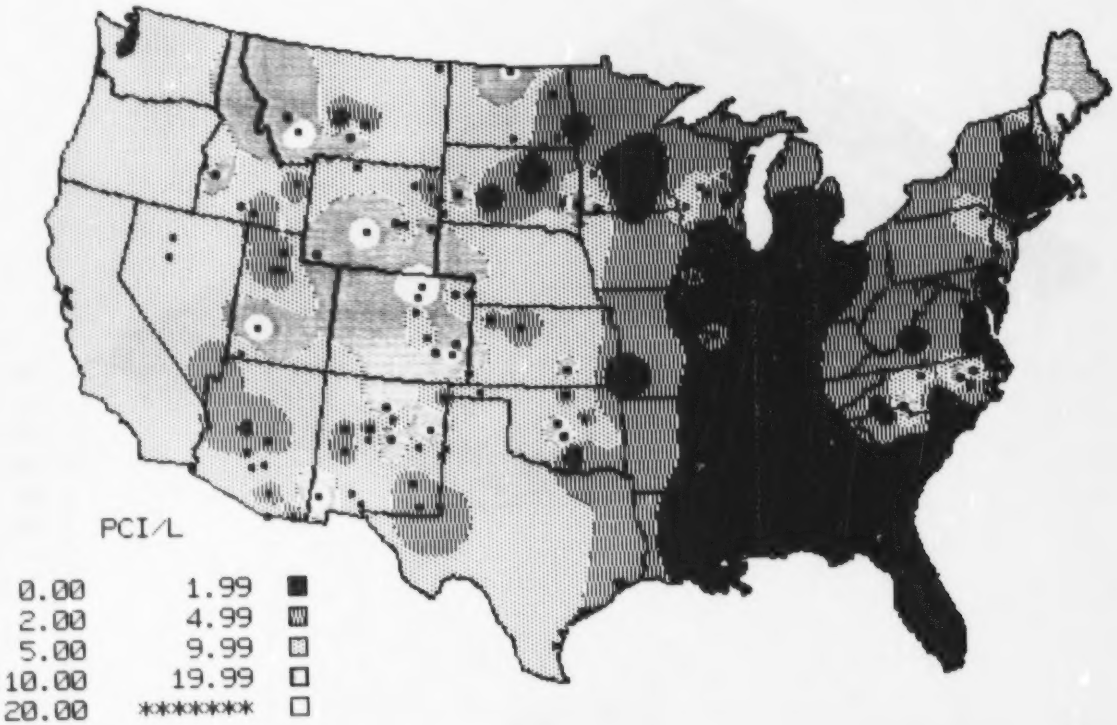

PCI/L
50.00
40.00
30.00
20.00
10.00
0.00

Figure 3.26. Average total uranium concentrations in public groundwater supplies (1981-1982)


PCI/L
0.00 1.99 ■
2.00 4.99 ▨
5.00 9.99 ▨
10.00 19.99 □
20.00 ******* □

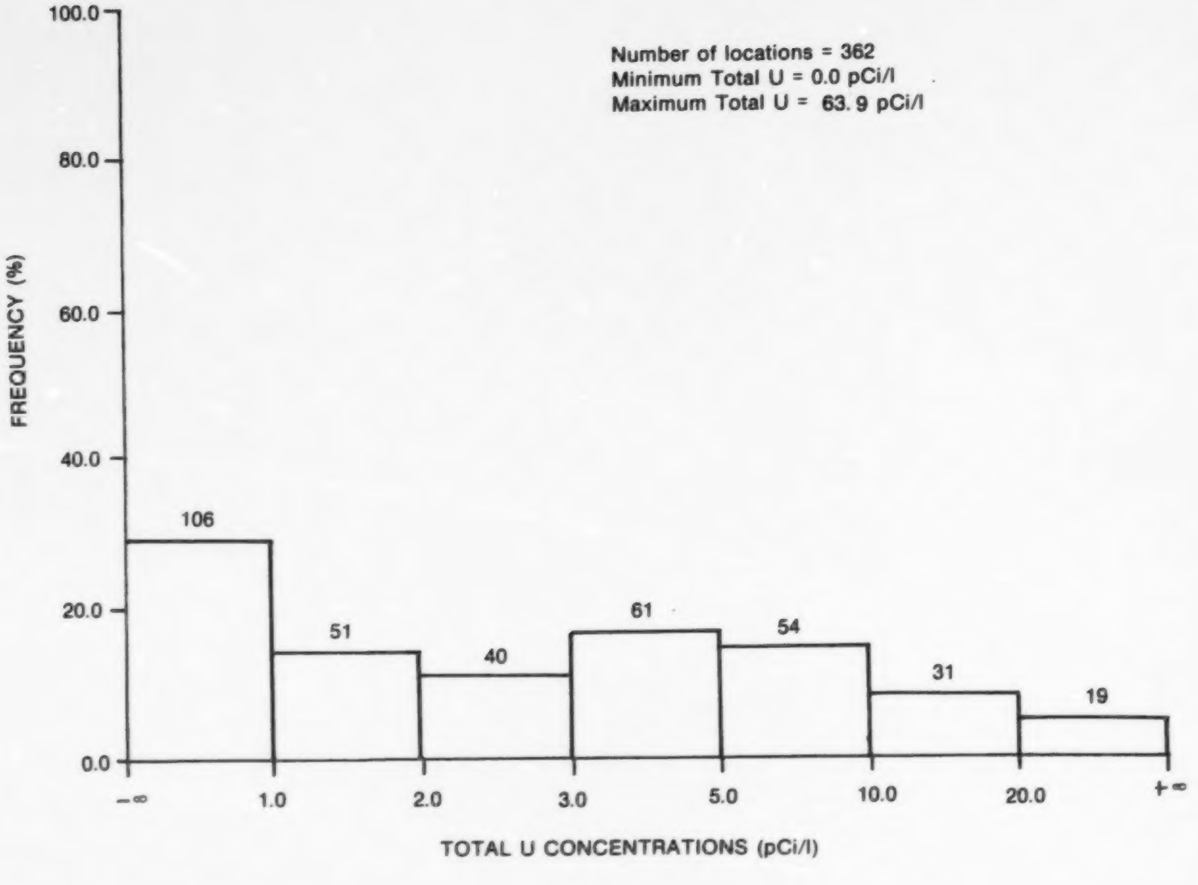


Figure 3.27. U.S. public groundwater systems: total U concentrations

3.11 U.S. U-234/U-238 Ratio Results

U-234/U-238 ratios are shown in Table 3.12 by state and U.S. arithmetic means, geometric means, and population weighted arithmetic means for supplies having a total U exceeding 3.5 pCi/l. Figures 3.28 and 3.29 display U-234/U-238 ratios by topographic mapping and contour mapping, respectively. A frequency distribution of U-234/U-238 ratios is shown in Figure 3.30. For comparison purposes only, U-234/U-238 ratios based on all results are given in Table 3.13 and Figure 3.31.

Table 3.12 Summary of U-234/U-238 ratios (total U >3.5 pCi/l) in public groundwater systems

STATE	ARITHMETIC MEAN	GEOMETRIC MEAN	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AZ	1.9 SD= 0.9	1.8 GD= 1.4	1.9	190201	10
CO	1.4 SD= 0.2	1.4 GD= 1.1	1.4	88854	19
ID	1.9 SD= 0.6	1.9 GD= 1.3	2.0	70039	11
NM	2.0 SD= 0.8	1.9 GD= 1.4	1.9	173552	24
WY	1.9 SD= 0.6	1.8 GD= 1.3	1.8	41987	10
US	1.8 SD= 0.9	1.7 GD= 1.4	1.8	978118	136

SD equals standard deviation.
GD equals geometric standard deviation.

Note: States having less than 10 locations for calculating a mean are not presented.

Figure 3.28. Average U-234/U-238 ratios in public groundwater supplies (Samples with total uranium > 3.5 pCi/l) (1981-1982)

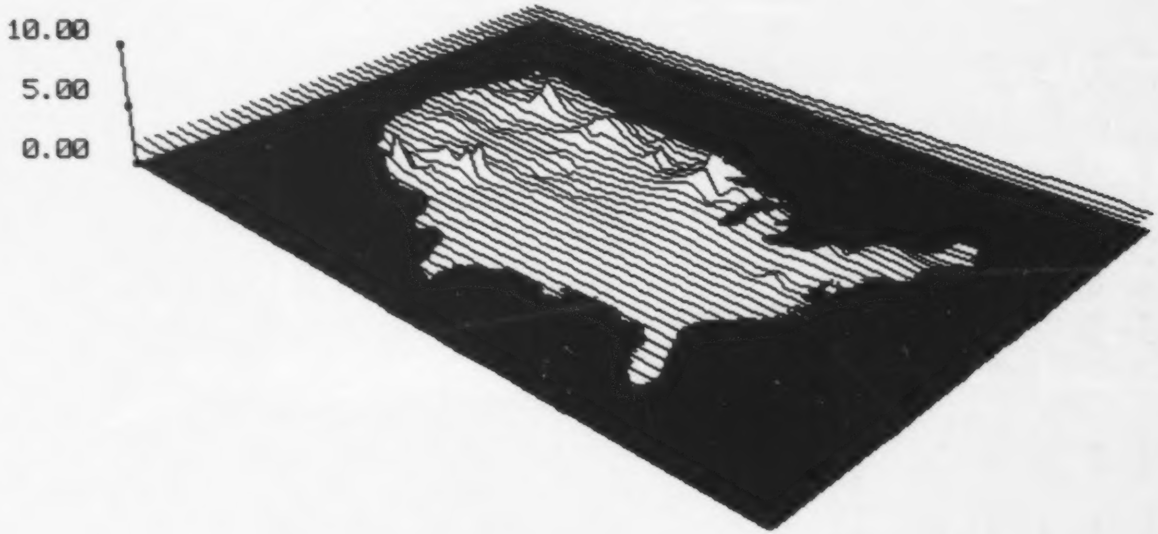
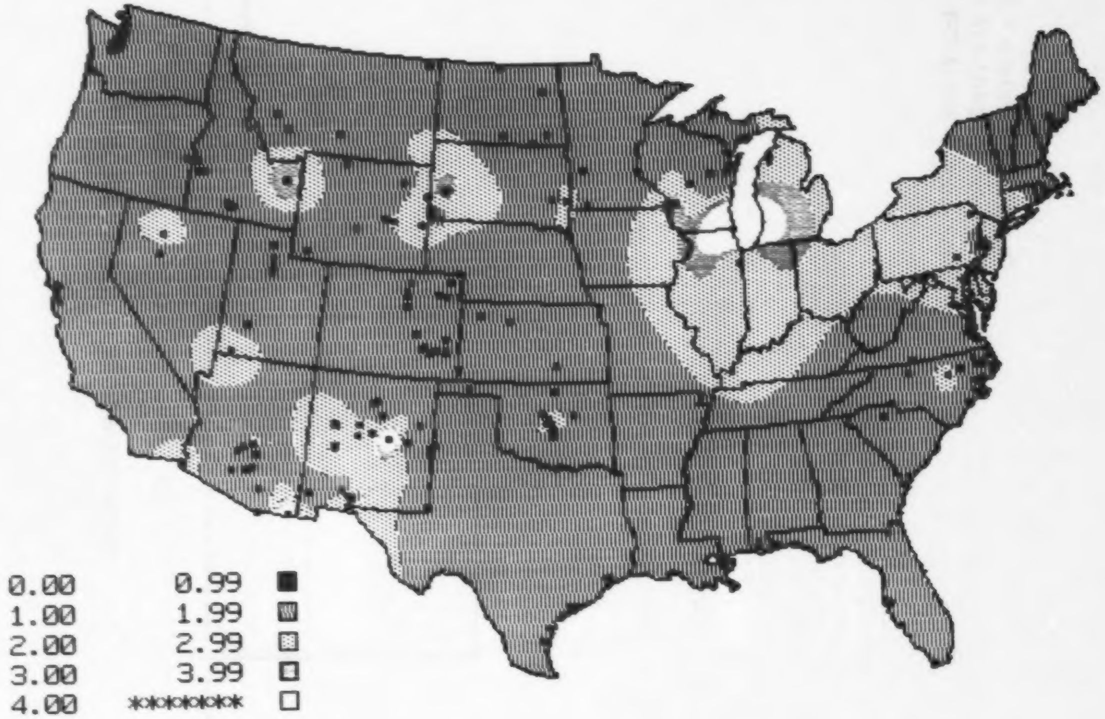


Figure 3.29. Average U-234/U-238 ratios in public groundwater supplies (Samples with total uranium > 3.5 pCi/l) (1981-1982)


0.00 0.99 ■
1.00 1.99 ▨
2.00 2.99 ▨
3.00 3.99 ▣
4.00 ******* □

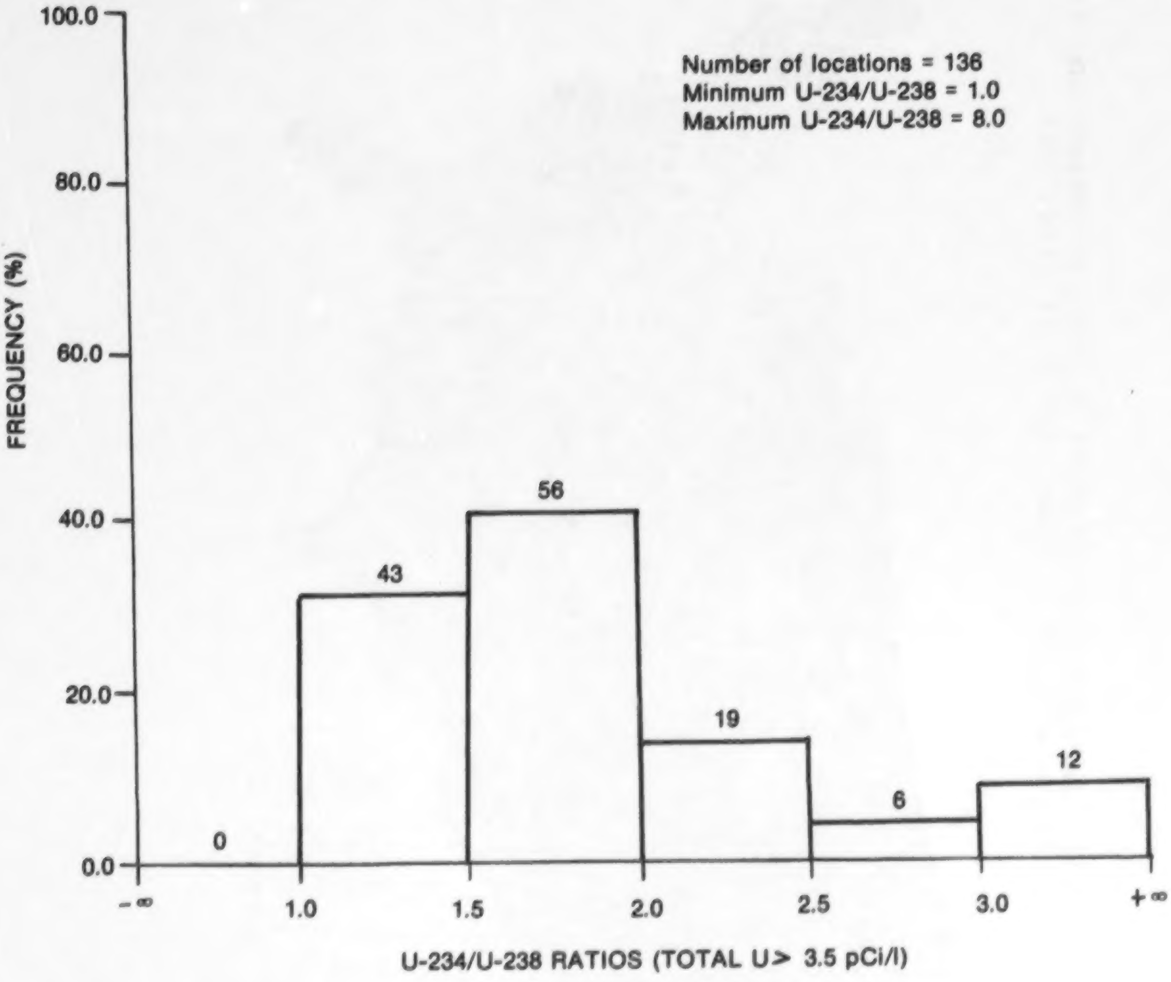


Figure 3.30. U.S. public groundwater systems: U-234/U-238 ratios

Table 3.13 Summary of U-234/U-238 ratios (all results) in public groundwater systems

STATE	ARITHMETIC MEAN	GEOMETRIC MEAN	ARITHMETIC MEAN (POP WEIGHTED)	TOTAL POP	# OF LOCATIONS
AZ	2.6 SD= 1.9	2.2 GD= 1.7	2.3	233426	18
CO	1.4 SD= 0.2	1.4 GD= 1.1	1.4	93904	21
ID	1.9 SD= 0.6	1.9 GD= 1.3	2.1	79573	13
IL	9.6 SD= 7.2	6.4 GD= 2.8	10.2	1070637	54
MN	3.1 SD= 2.4	2.4 GD= 2.0	3.0	164194	15
NC	2.1 SD= 1.4	1.8 GD= 1.8	1.7	12590	10
NM	2.3 SD= 1.0	2.1 GD= 1.5	2.2	223152	30
OK	2.0 SD= 0.8	1.9 GD= 1.4	2.0	85073	10
PA	2.2 SD= 0.7	2.1 GD= 1.3	1.9	126690	10
UT	2.0 SD= 1.0	1.8 GD= 1.6	1.9	255030	17
WI	9.8 SD= 6.5	7.7 GD= 2.2	11.4	218640	34
WY	2.0 SD= 0.6	1.9 GD= 1.3	1.9	44337	12
US	4.4 SD= 5.2	2.7 GD= 2.4	5.8	2883589	296

SD equals standard deviation.
GD equals geometric standard deviation.

Note: States having less than 10 locations for calculating a mean are not presented.

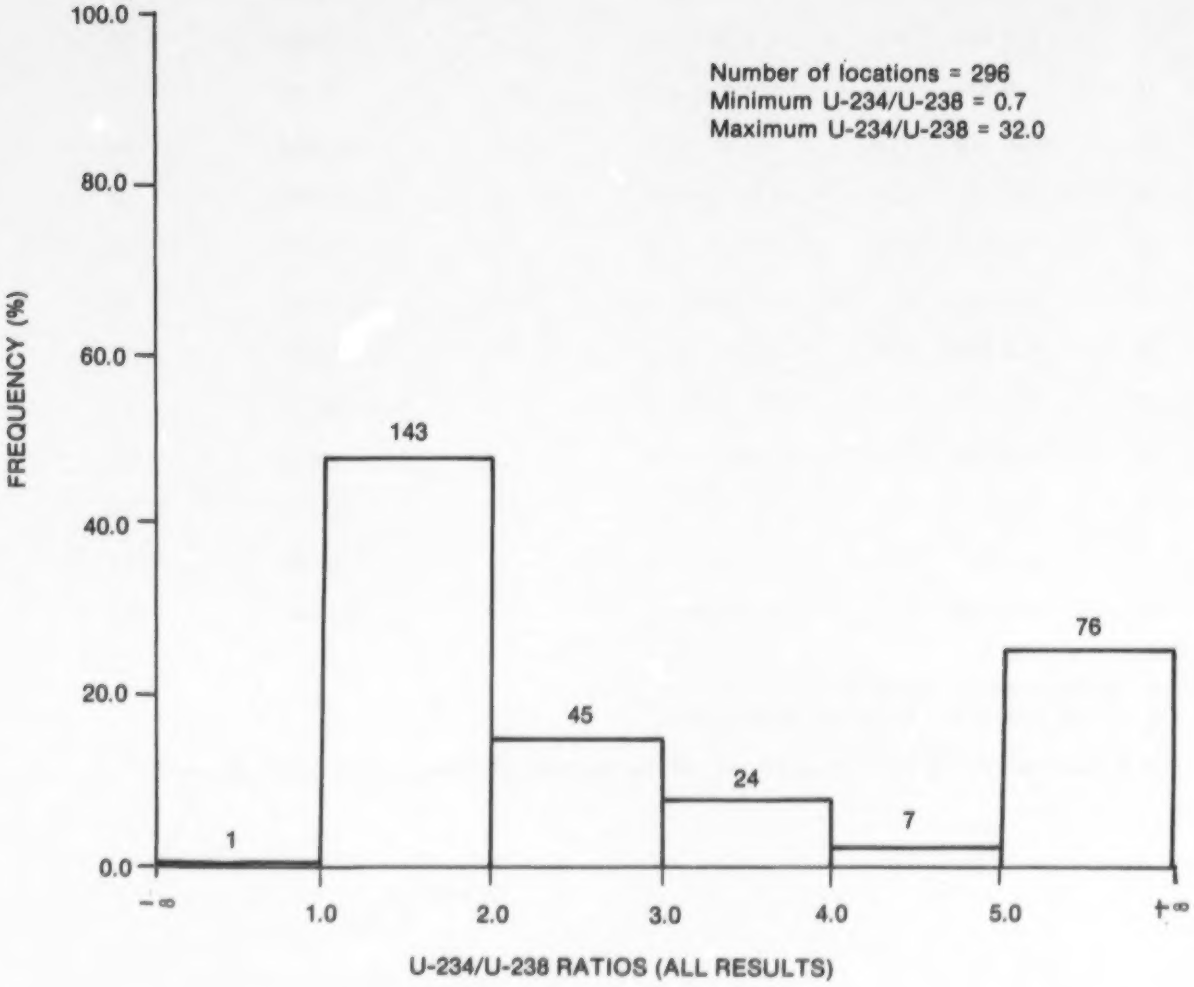


Figure 3.31. U.S. public groundwater systems: U-234/U-238 ratios (all results)

4.0 DISCUSSION OF RESULTS

4.1 Section 3 Discussion

4.1.1 Rn-222

Elevated Rn-222 concentrations, determined in this study, are found primarily in Virginia, North and South Carolina, the New England states, and scattered locations in the Midwest and western parts of the country. These results generally coincide with what was observed during the pilot study except the concentrations are not as elevated. This decrease in activity is thought to be due to the intended purpose of not sampling water supplies because they are known or thought to be elevated (an attempt at minimizing biased results). In most cases, the elevated levels tend to be highly localized. Exceptions to this observation are found in Maine and Rhode Island (and possibly other New England states) where elevated levels tend to be more widespread instead of isolated cases. Relying on mean values for characterizing a state, the entire U.S., or even a county within a state can be misleading due to the wide variations observed on the state level and even the county level. For example, North Carolina has a number of water supplies that have elevated levels but the geometric mean (or median value) is very low due to the high number of supplies that are low in Rn-222 (see Table 3.2).

Radioactivity results are summarized in several different ways to provide readers of this report with practical options in understanding the overall impact of this study. All summaries are based on raw results found in Appendix B.

A limited number of public surface water supplies were sampled in this study. As can be seen from the results in Appendix C, Rn-222 concentrations were very low. This same result was seen in the pilot study. Gross alpha and gross beta results were also very low.

During the pilot study a general trend was observed where on the average smaller public groundwater systems exhibited higher Rn-222 concentrations. Combining the results from the nationwide study and the pilot study, this trend remained (He84). This trend may be due in part to less treatment such as aeration, less water holdup resulting in Rn-222 decay, and low capacity wells giving less Rn-222 dilution. As can be seen from Table D.1 in Appendix D, this trend was not evident in the nationwide study alone due in part to the very few samples collected at the < 100 people served water systems. Comparing the U.S. means based on all groundwater samples collected during the nationwide study (Table 3.2) with the U.S. means based on groundwater systems serving 1000 or more people (Table D.1), essentially no difference was seen.

The absence of Rn-222 data from Maine during the nationwide study was unfortunate since many public groundwater supplies in Maine exhibit elevated levels as was seen in the pilot study. On a nationwide basis the omission of Maine data does not significantly alter nationwide trends in Rn-222 concentrations. On a regional and state basis, areas within Maine with higher than average concentrations or lower than average concentrations are averaged out by extrapolation and interpolation from other New England states.

4.1.2 Gross Alpha

Elevated gross alpha levels were seen primarily in the Rocky Mountain states (Figures 3.7 and 3.8). Gross alpha measurements were used as a screening device for Ra-226 and uranium. Generally, the elevated levels nationwide are due to elevated uranium. About 85 percent of the supplies had gross alpha concentrations of less than 3 pCi/l (Figure 3.9). The geometric mean for the U.S. was 0.5 pCi/l (Table 3.3).

4.1.3 Gross Beta

Elevated gross beta concentrations were very spotty as seen in Figures 3.10 and 3.11. Theoretically, elevated Ra-228 levels should be associated with elevated gross beta levels. In practice, gross beta levels only serve as a qualitative indicator of Ra-228 at best. The geometric mean for the U.S. was 2.0 pCi/l (Table 3.4).

4.1.4 Ra-226

Elevated Ra-226 concentrations (Figure 3.14) were seen from North Carolina to Florida along the Atlantic Ocean and the Midwest (Illinois, Wisconsin, Minnesota, South Dakota, and Kansas). Very low Ra-226 levels were found in the western states. The geometric mean for the U.S. was 0.6 pCi/l (Table 3.5). About 9 percent of water supplies analyzed for Ra-226 exceeded 5 pCi/l (Figure 3.15), the national interim primary drinking water regulation for radium (FR76, EPA76). No nationwide correlation was observed between Rn-222 and Ra-226 concentrations, while in some local areas a correlation may exist. The reader is cautioned that these results only apply to public groundwater supplies where the gross alpha result was 3 pCi/l or greater (see Section 2.0).

The absence of Ra-226 data from Iowa during the nationwide study was unfortunate since many public groundwater supplies in Iowa exhibit elevated levels. Fortunately, these elevated levels have been documented in other reports.

4.1.5 Ra-228

Elevated Ra-228 concentrations were generally found in water supplies where the Ra-226 was elevated. Illinois, Minnesota, North Carolina, South Dakota, and Wisconsin tended to be the most elevated in Ra-228. The geometric mean for the U.S. was a biased 2.1 pCi/l (Table 3.6). Only water supplies where the Ra-226 concentration was equal to or greater than 3.0 pCi/l were analyzed for Ra-228. A few water supplies were analyzed for Ra-228 when the gross beta was equal to or greater than 15.0 pCi/l. About 24 percent of the water supplies analyzed for Ra-228 (Figure 3.16) exceeded 5 pCi/l, the national interim primary drinking water regulation for radium (FR76, EPA76), based on Ra-228 alone.

4.1.6 Total Ra and Ra-226/Ra-228 Ratio

Elevated total Ra concentrations were found in nearly every state where total Ra analyses were performed (Table 3.7). The state geometric mean exceeded 5.0 pCi/l, the national interim primary drinking water regulation for radium (FR76, EPA76), for every state where total Ra analyses were performed except Georgia, Virginia, and Wyoming (Table 3.7). About 79 percent (77 out of 97) of the water supplies analyzed for total Ra exceeded 5 pCi/l (Figure 3.17). The reader is cautioned that these results only apply to public groundwater supplies where the Ra-226 result was 3 pCi/l or greater (see Section 2.0).

In about 28 percent of the water supplies, the Ra-228 exceeded the Ra-226 (Figure 3.18). By only analyzing a sample for Ra-228 when the Ra-226 is equal to or greater than 3.0 pCi/l potentially allows a water supply with elevated Ra-228 but Ra-226 less than 3.0 pCi/l to avoid the radium regulation (FR76, EPA76). The Ra-226/Ra-228 ratio geometric mean for the U.S. was 1.5 (Table 3.8). According to Michel and Moore (Mi80), Ra-226/Ra-228 ratios as low as 0.3 have been shown to exist in South Carolina. Similar situations were also noted in Georgia (Ci83). Ratios as low as 0.3 were also observed in this study (Figure 3.18).

4.1.7 U-234, U-238, Total U, and U-234/U-238 Ratio

Elevated uranium concentrations were observed in many of the western states (Montana, Idaho, Wyoming, Colorado, New Mexico, and Utah), the Midwest (North and South Dakota, Minnesota, Wisconsin, Kansas, and Oklahoma), and a few eastern states (Maine, Pennsylvania, and North Carolina) as seen in Figures 3.19, 3.20, 3.22, 3.23, 3.25, and 3.26. The U.S. geometric means for U-234, U-238, and total U were 1.1 pCi/l (Table 3.9), 0.4 pCi/l (Table 3.10), and 1.5 pCi/l (Table 3.11). About 14 percent (50 out of 362) of the water supplies analyzed for uranium exceeded 10 pCi/l (Figure 3.27), the EPA's Office of Drinking Water (ODW) Health Advisory (HA) for uranium (La83). The reader is cautioned that these results only apply to public groundwater supplies where the gross alpha result was 3 pCi/l or greater (see Section 2.0).

The ratio of U-234 to U-238 is of interest to those areas where elevated uranium concentrations exist. Using uranium results whose total U exceeded 3.5 pCi/l, Figures 3.28, 3.29, and 3.30 and Table 3.12 were constructed. Low activity samples with their inherent uncertainty were excluded. About 73 percent (99 out of 136) of the water supplies had a U-234/U-238 ratio between 1.0 and 2.0. The geometric mean for the U.S. was 1.7 (Table 3.12). About 9 percent (12 out of 136) of the water supplies had ratios that exceeded 3 (Figure 3.30) whose locations are shown in Figure 3.29. If all results were included, the geometric mean for the U.S. was calculated to be 2.7 (Table 3.13) with about 36 percent (107 out of 296) of the water supplies exceeding 3 (Figure 3.31).

4.2 Regional Approach

One limitation in producing U.S. maps of concentration is that peaks and valleys of concentration tend to be averaged out excessively, especially in those regions where elevated trends are not widespread and numerous water supplies were sampled. For example, several highly elevated water systems in Rn-222 were found in North Carolina, South Carolina, and Virginia, but the results were obscured in Figures 3.3 and 3.4. On the other hand, in areas where few water supplies were sampled and elevated levels of Rn-222 occurred (examples are found in the Far West), elevated levels for those cases were prominent in Figures 3.3 and 3.4. The obscuring of results was primarily seen in the case of Rn-222, but also, to a lesser degree, applied to other U.S. radioactivity maps.

By presenting results in groups of states or regions (see Appendix E), some of the localized averaging was eliminated and more detail was preserved. EPA has ten regional offices throughout the U.S. Each regional office serves at least two states. For example, Region II services New York and New Jersey while Region IX encompasses California, Arizona, Nevada, and Hawaii. Regional maps were produced for all ten regions, except Region VI, based on the nationwide study. Rn-222 and gross alpha were plotted for each of nine regions (Appendix E) while Ra-226 and total uranium were only plotted for those regions where sufficient numbers of results were available. Ra-228 was also plotted for Region VII (Figure E.18).

A special region or group of states was also selected for further study. This region involved Georgia, North Carolina, South Carolina, and Virginia. In general, elevated levels of radioactivity, especially Rn-222, were observed in this four state region (Figures E.30, E.31, and E.32).

In order to better define the distribution of Rn-222 nationwide, Rn-222 results for those states which did not participate in the nationwide study, but did participate in the pilot study, were combined with the nationwide study results. Also included in the expanded results were some unpublished Rn-222 results (Pr79) for Arkansas, Iowa, Louisiana, Nebraska, and Texas. Both the pilot study and unpublished results were for public groundwater supplies only. A map of expanded locations is shown in Figure 4.1. Except for the states of Washington, Michigan, West Virginia, Maryland, Connecticut, and Texas (only one location) where no results were available and the states of California and Kansas with sparse coverage, the continental U.S. has been widely sampled for Rn-222 as displayed in Figure 4.1. On the U.S. scale maps, the addition of results from states which did not participate in the nationwide study did not significantly alter the results for those states as seen in Figures 4.2 and 4.3 as compared to Figures 3.3 and 3.4. Having radon results from all 48 contiguous states would be desirable, but in practice may not be necessary in order to generate U.S. scale maps. This is not the case with larger scale maps such as regional and state maps. Rn-222 regional maps were produced for Regions I, II, VI, VII, and IX (Figures E.33-E.37) based on the expanded locations. As would be expected the regional maps based on the expanded locations (Figures E.33, E.34, E.36, E.37) gave more detail for states that were missing in the nationwide study as compared to corresponding Figures E.1, E.3, E.15, and E.24 based on the nationwide study only.

Figure 4.1. Expanded locations of public groundwater supplies sampled for Rn-222

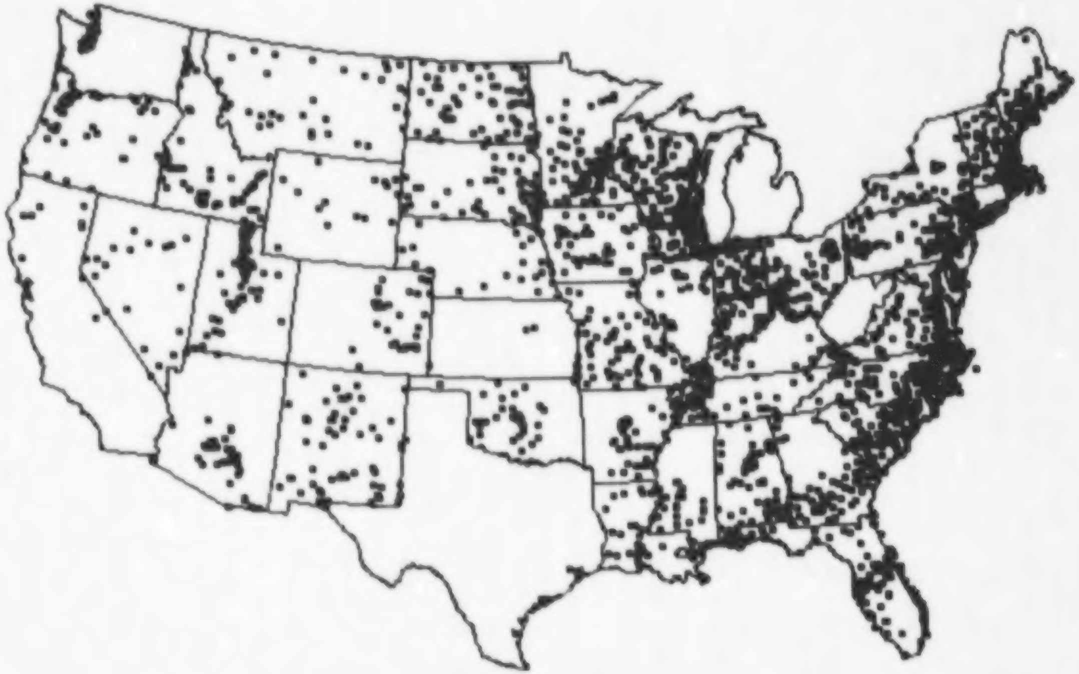


Figure 4.2. Average Rn-222 concentrations in public groundwater supplies (1978-1982)

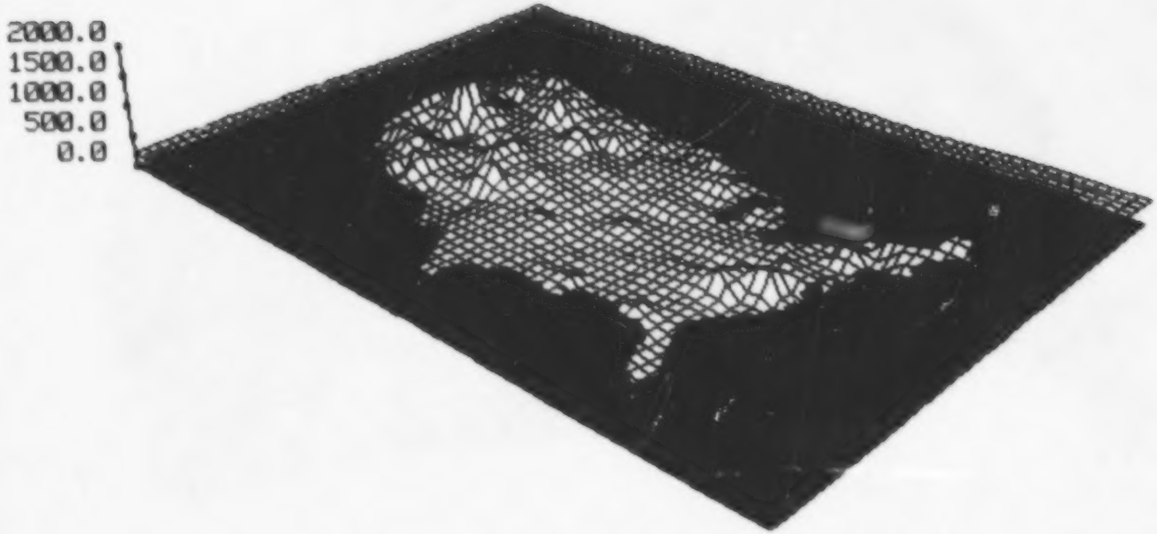
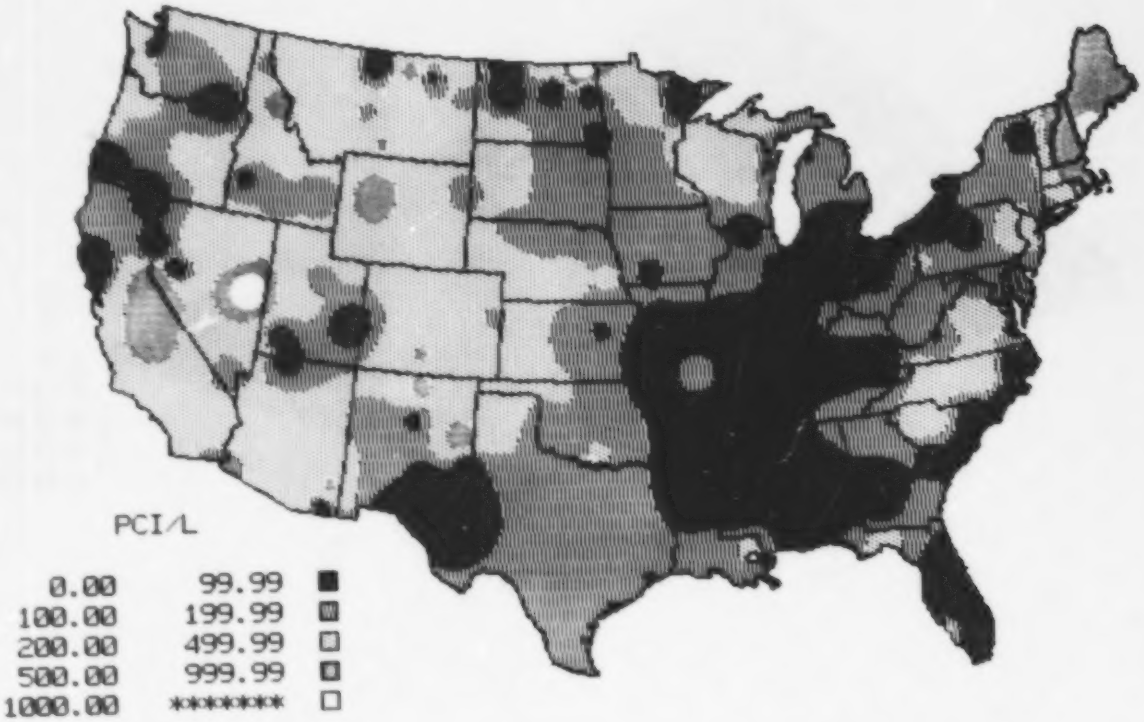

2000.0
1500.0
1000.0
500.0
0.0

Figure 4.3. Average Rn-222 concentrations in public groundwater supplies (1978-1982)


PCI/L
0.00 99.99 ■
100.00 199.99 ▩
200.00 499.99 ▨
500.00 999.99 ▩
1000.00 ******** □

4.3 Selective Monitoring

4.3.1 Areas With High Rn-222 Activity

As was discussed in Section 4.2, elevated levels tended to be averaged out or obscured by previous mapping efforts. One mapping technique that helped to lessen this problem was to plot the locations of water supplies exceeding a specified concentration. Using the Rn-222 results from the nationwide study, plots were generated showing the locations of water supplies exceeding 500 pCi/l (Figure 4.4), 1000 pCi/l (Figure 4.5), 2000 pCi/l (Figure 4.6), 5000 pCi/l (Figure 4.7), and 10,000 pCi/l (Figure 4.8). At the 500 pCi/l level, the Rn-222 distribution for the U.S. was widespread. At the 1000 pCi/l level, the distribution became more confined to the East Coast with scattered results in the Midwest and Far West. At the 2000 pCi/l and 5000 pCi/l levels, results were concentrated on the East Coast. At the 10,000 pCi/l level, only North Carolina and South Carolina were included (Figure 4.8). The highest Rn-222 concentration exceeded 16,000 pCi/l.

Using the results depicted in Figure 4.1 and other Rn-222 results for public groundwater supplies (pilot study, AL75, He79, Ka77, Mc82, Pr79), the same levels as before were plotted in Figures 4.9-4.13. Similar nationwide distribution patterns were observed at the 500 pCi/l, 1000 pCi/l, and 2000 pCi/l levels. With the addition of Maine results (pilot study, He79) and pilot study Rhode Island and Virginia results, the distribution at the 10,000 pCi/l level not only included North Carolina and South Carolina but also Virginia, Rhode Island, and Maine. At the 5000 pCi/l level Maine and California were added (Figure 4.12). The lone California result was due to a small groundwater supply serving a remote BLM fire station.

Since extreme values for Rn-222 are localized, an effective monitoring program for Rn-222 could be accomplished by only sampling public groundwater systems where extreme values of Rn-222 in groundwater have been observed in the past. Similar selective monitoring schemes may also apply to Ra-226, Ra-228, and uranium in those areas where elevated levels have been observed.

Figure 4.4. Public groundwater supplies exceeding 500 pCi/l of Rn-222
(Based on the nationwide study only)

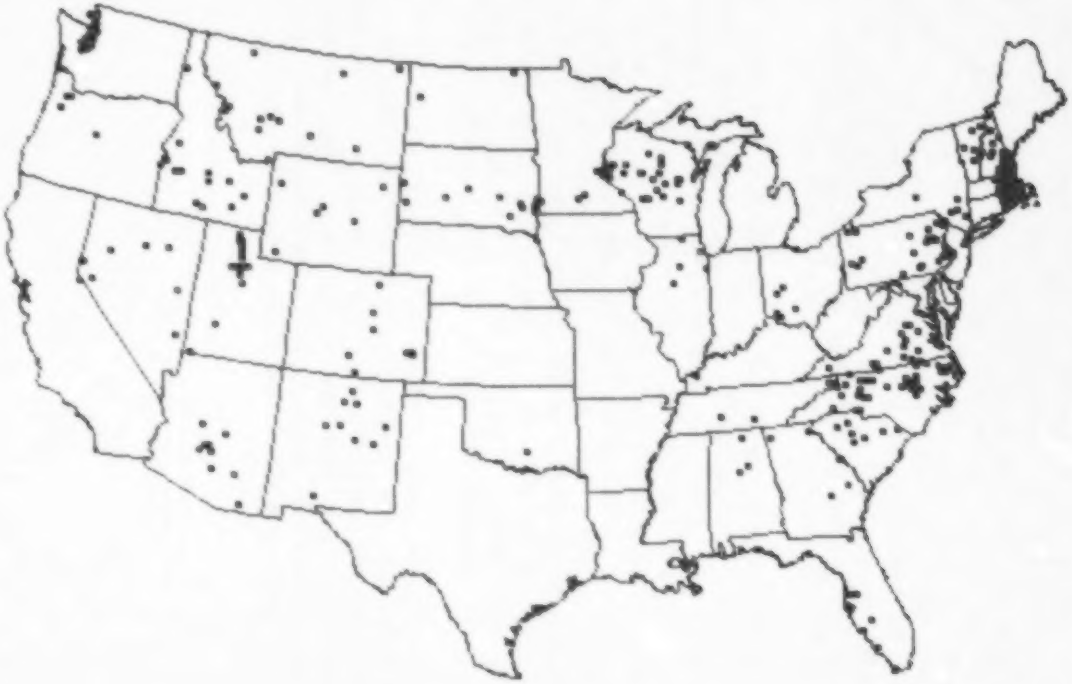


Figure 4.5. Public groundwater supplies exceeding 1000 pCi/l of Rn-222
(Based on the nationwide study only)

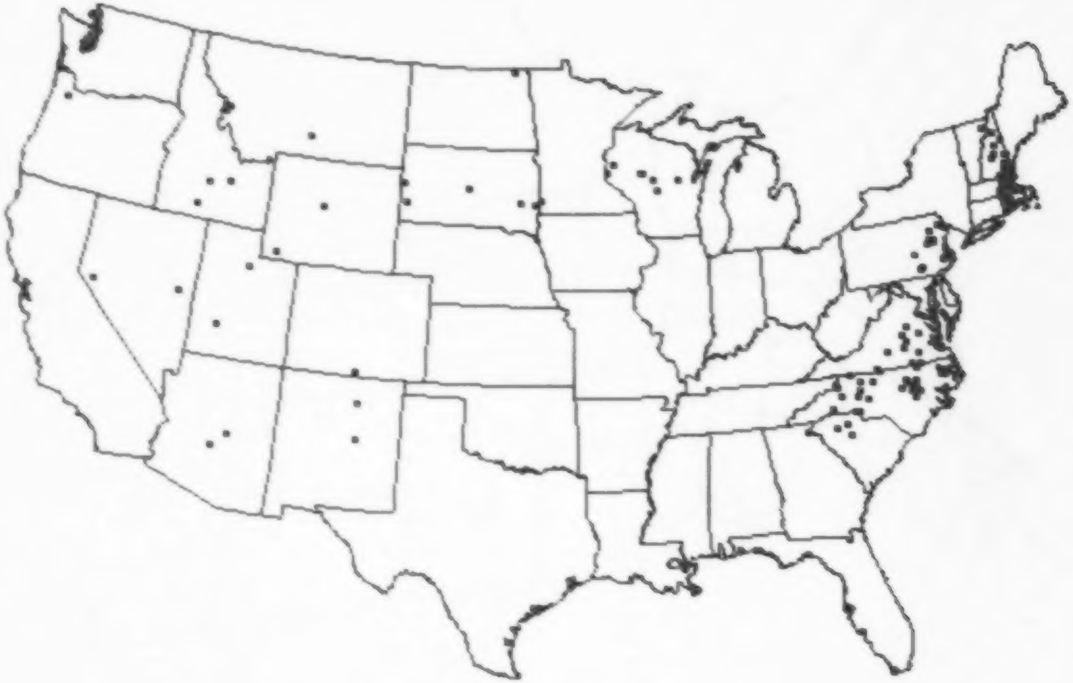


Figure 4.6. Public groundwater supplies exceeding 2000 pCi/1 of Rn-222
(Based on the nationwide study only)

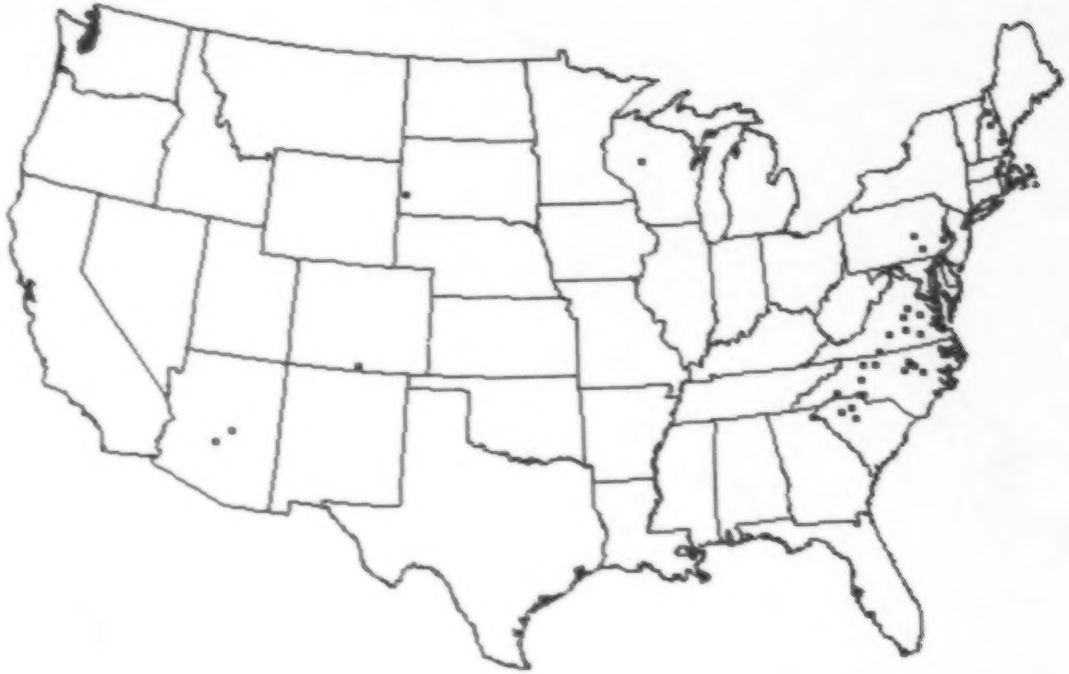


Figure 4.7. Public groundwater supplies exceeding 5000 pCi/l of Rn-222
(Based on the nationwide study only)

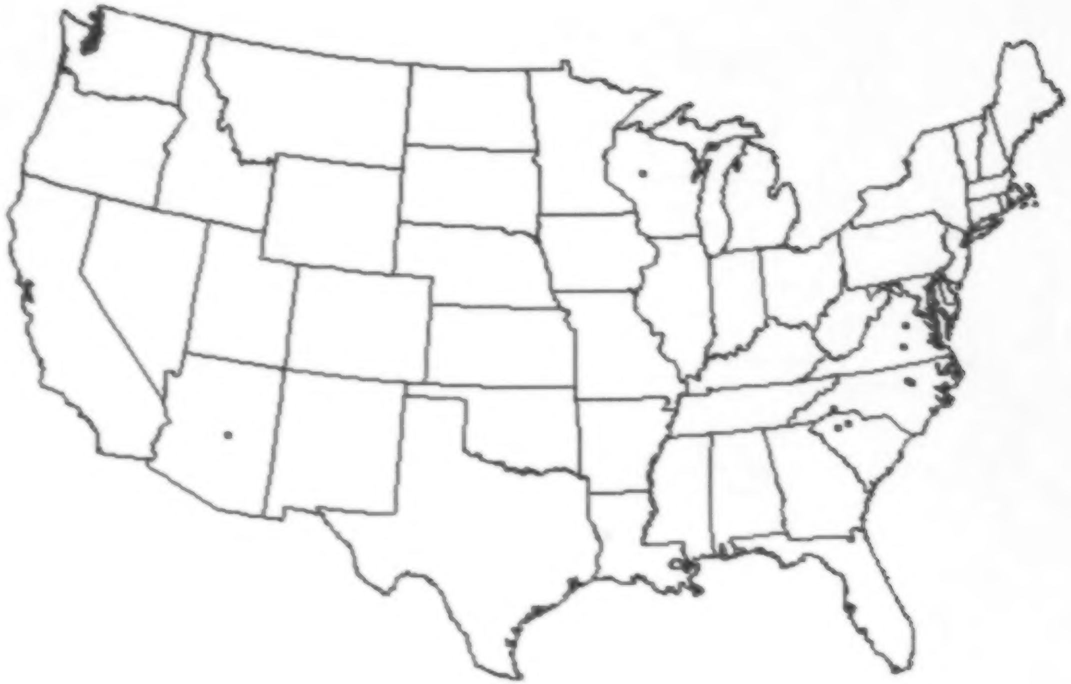


Figure 4.8. Public groundwater supplies exceeding 10,000 pCi/l of Rn-222
(Based on the nationwide study only)

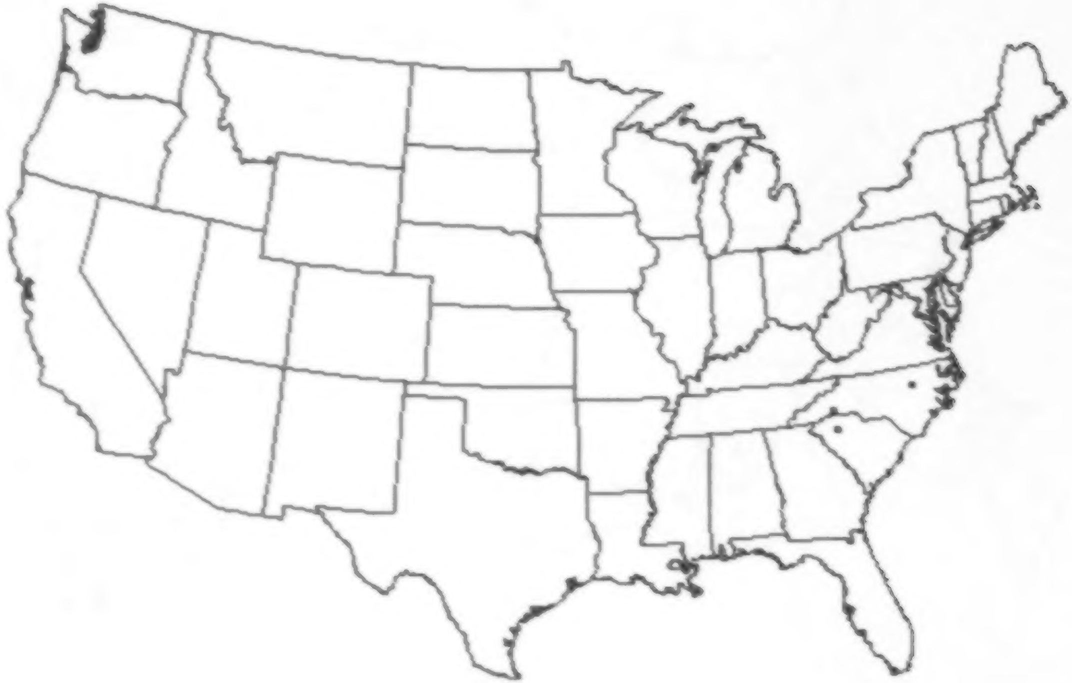


Figure 4.9. Expanded locations of public groundwater supplies sampled for Rn-222 exceeding 500 pCi/l

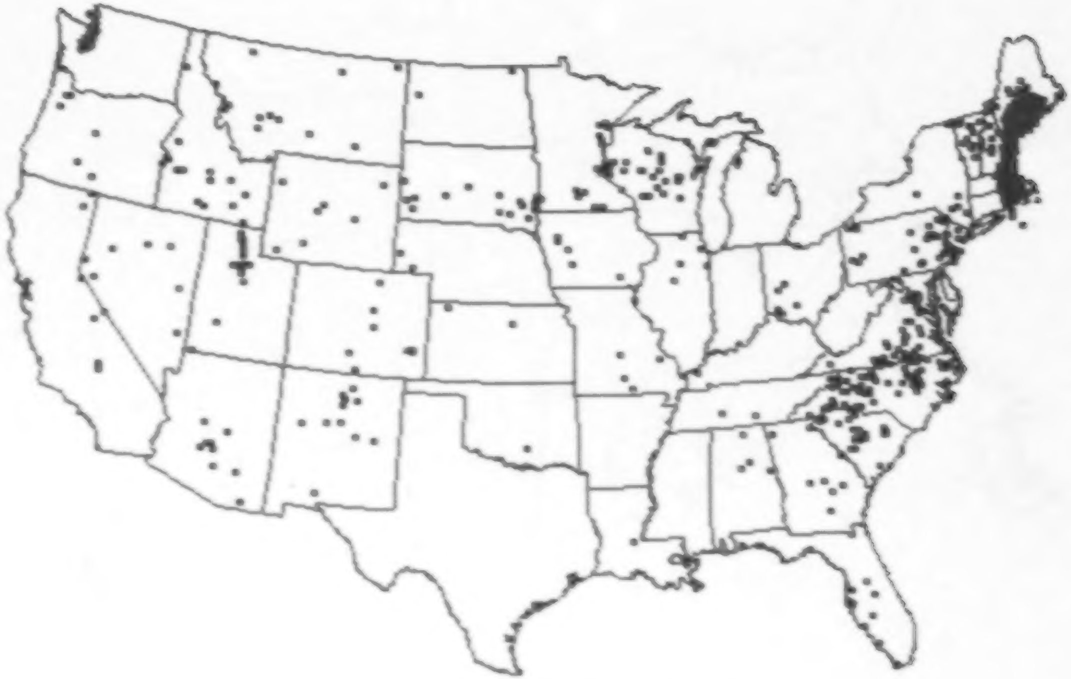


Figure 4.10. Expanded locations of public groundwater supplies sampled for Rn-222 exceeding 1000 pCi/l

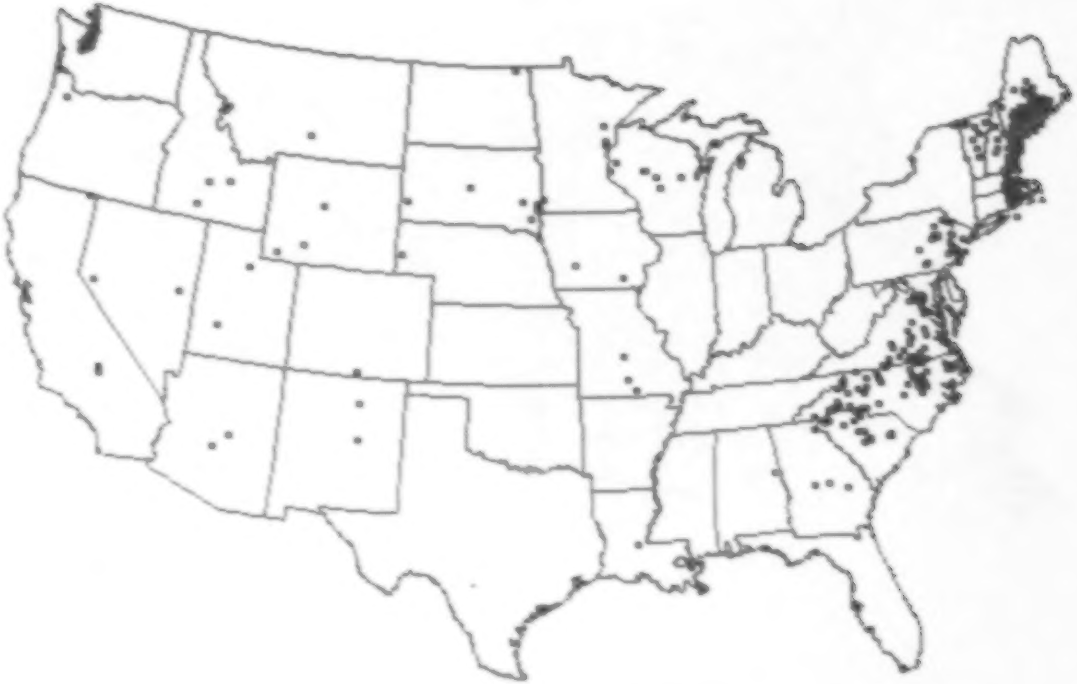


Figure 4.11. Expanded locations of public groundwater supplies sampled for Rn-222 exceeding 2000 pCi/l

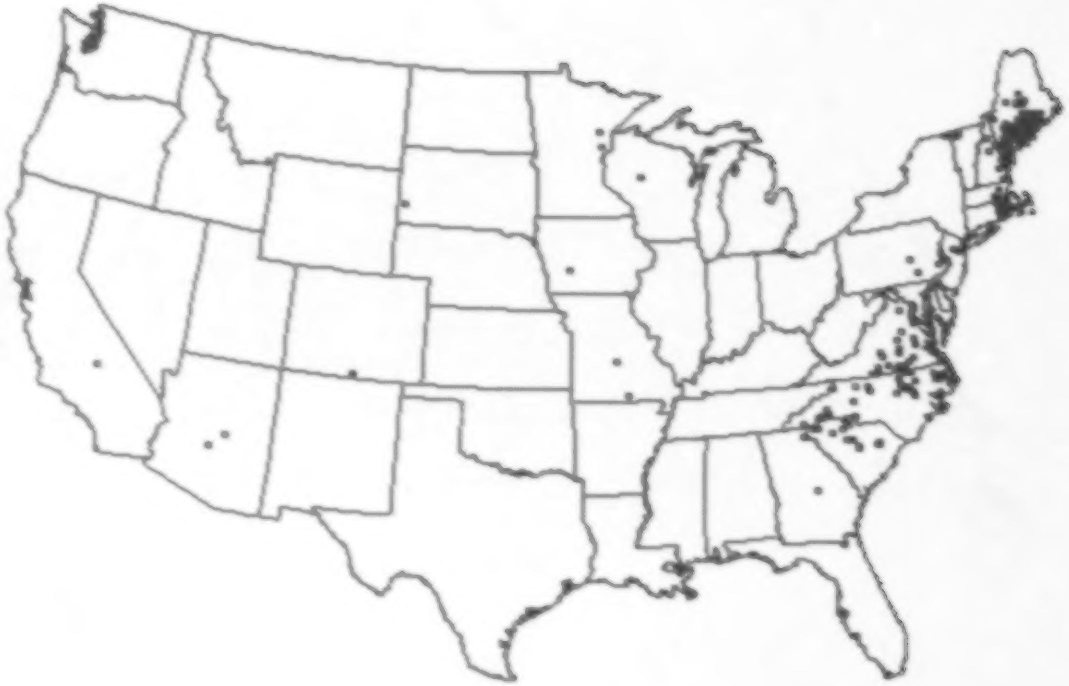


Figure 4.12. Expanded locations of public groundwater supplies sampled for Rn-222 exceeding 5000 pCi/l

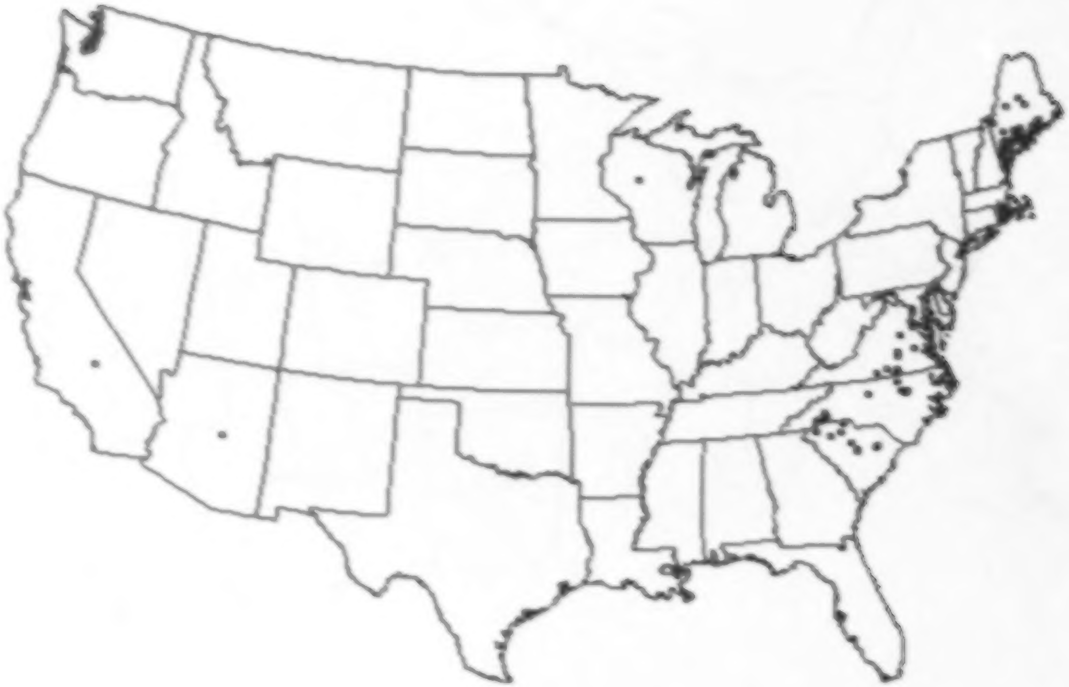
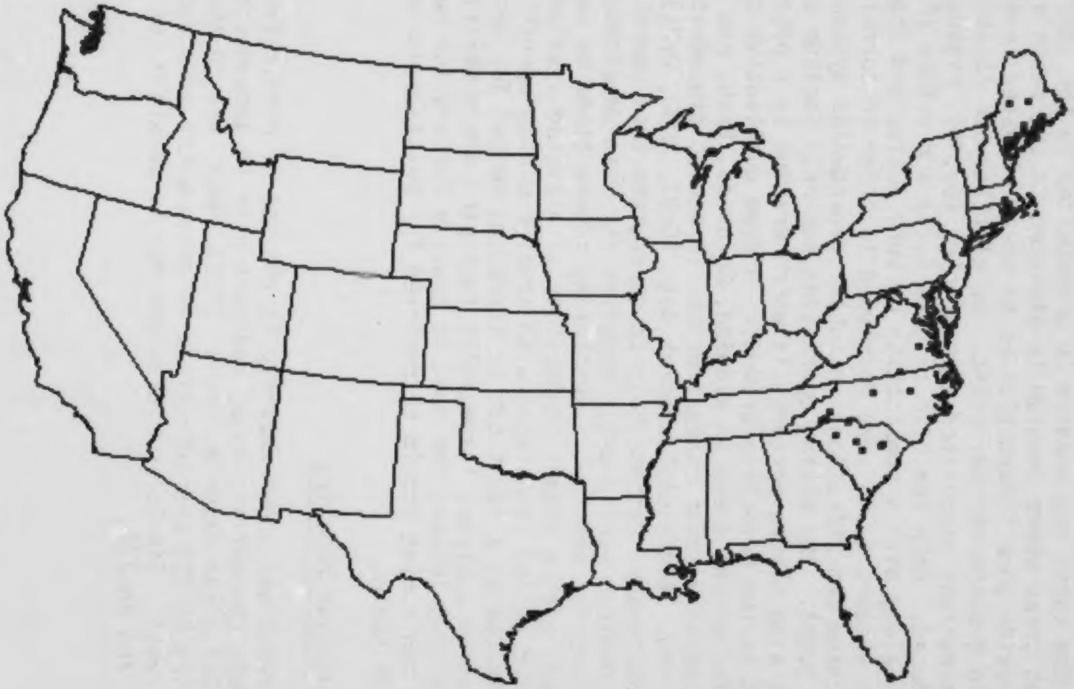


Figure 4.13. Expanded locations of public groundwater supplies sampled for Rn-222 exceeding 10,000 pCi/l



4.3.2 Mining Locations as a Screening Method for Uranium

Logically, a correlation should exist between where uranium is found in the earth and uranium in groundwater in the same areas. Looking at areas where uranium is elevated in the earth's crust should provide some information as to where elevated levels of uranium in groundwater may exist. By plotting the locations of mining operations associated with uranium (DoI79), Figures 4.14-4.16 were produced. Both inactive (Figure 4.14) and active (Figure 4.15) locations along with a combination of both active and inactive locations (Figure 4.16) were developed in order to correlate with total uranium concentrations in public groundwater systems (Figures 3.25 and 3.26). The mining operations not only include uranium mines but also mining ventures in which uranium is a potential byproduct to the principle product. A good qualitative correlation is seen for mining areas in Wyoming, Colorado, Utah, and New Mexico where elevated uranium concentrations in public groundwater systems are observed. Additional uranium data (Co83, NM80, Dr81) from public groundwater systems help to strengthen this correlation. As a way to monitor public water supplies for uranium without sampling all supplies for uranium, a monitoring scheme based on sampling those areas with a higher probability of elevated uranium in groundwater (areas associated with uranium mining operations) could be implemented as a first cut or screening method for uranium. Since uranium analyses (especially isotopic) are expensive, any technique that lessens the need to analyze for uranium but provides adequate monitoring should be explored for possible use on a nationwide basis.

4.4 Predictive Modeling

Interest was shown recently in the use of predictive modeling to estimate concentrations of radioactivity in groundwater (Mi81, Mi83, He84). For example, Michel (Mi83, He84) was in the process of correlating Ra-228 concentrations in groundwater with rock type (or aquifer type). Similar correlations may be possible for Ra-226, uranium, and Rn-222.

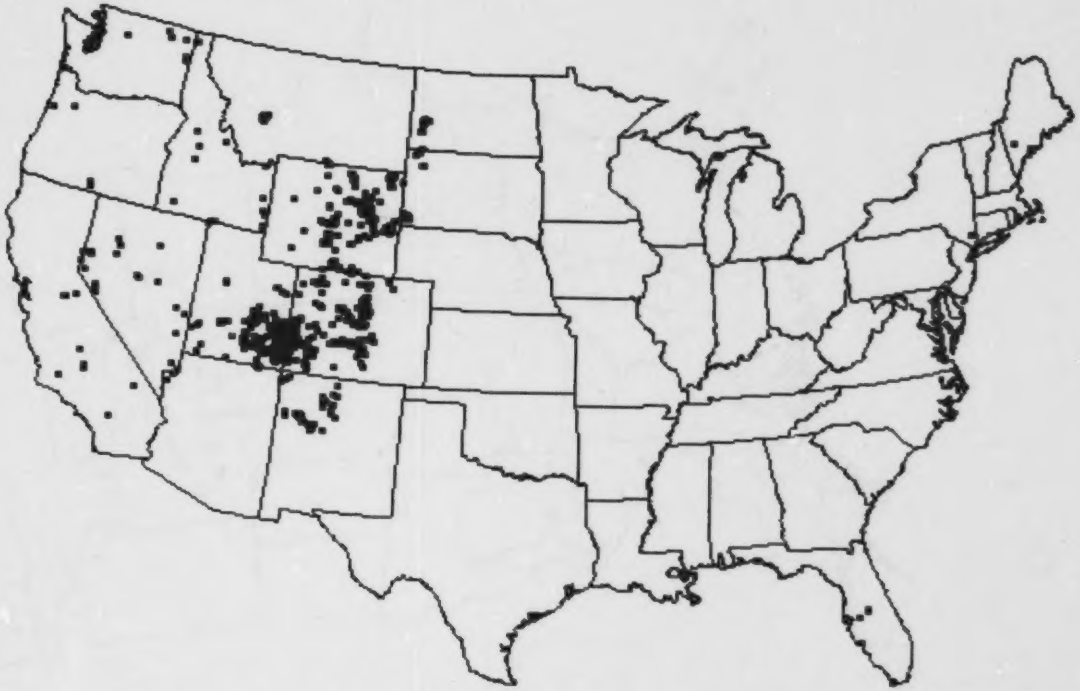


Figure 4.14. Locations of inactive mining operations associated with uranium (1979)

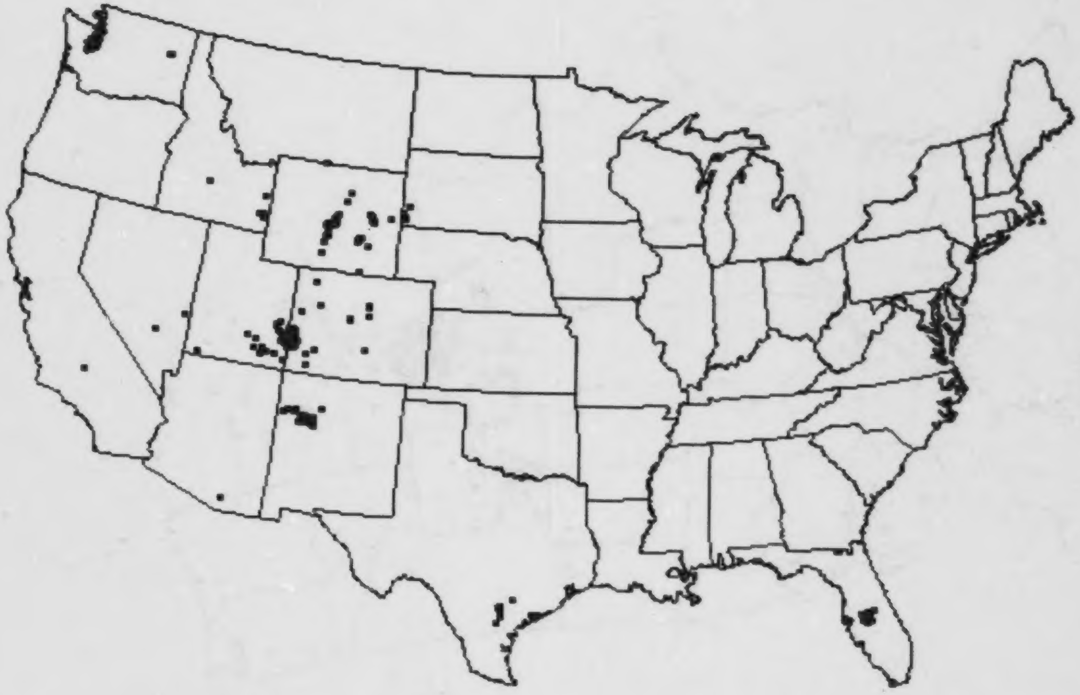


Figure 4.15. Locations of active mining operations associated with uranium (1979)

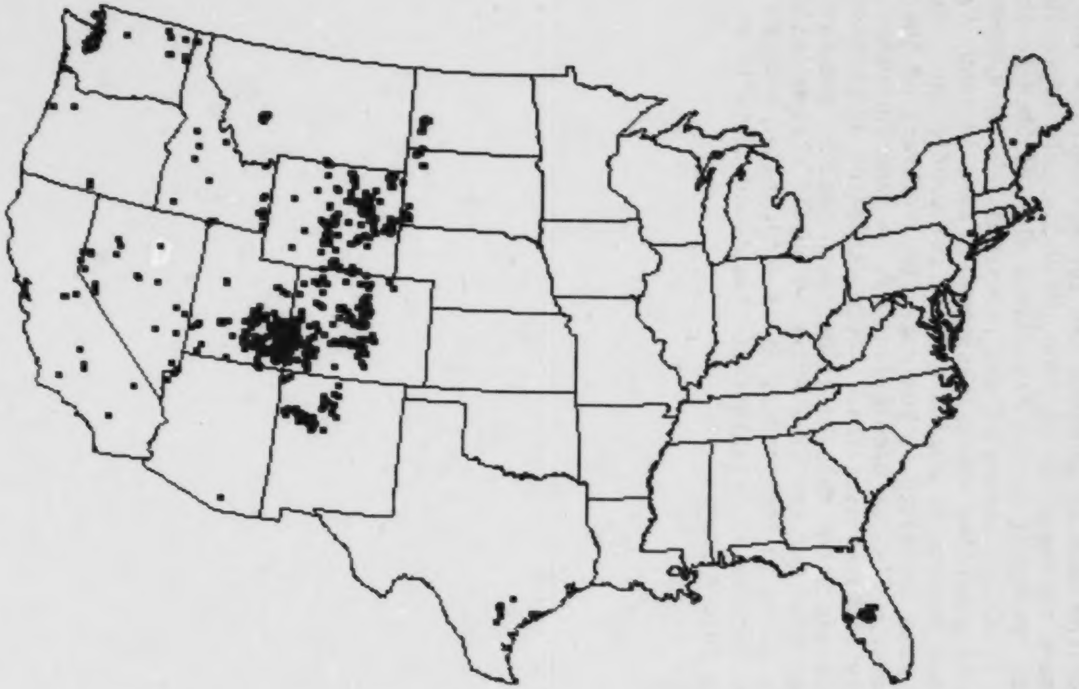


Figure 4.16. Locations of both active and inactive mining operations associated with uranium (1979)

The author of this paper has attempted to estimate Rn-222 concentrations based on Rn-222 measurements in adjacent regions and using computer software which generated a Rn-222 concentration surface above the area of interest (Kn84). By specifying a latitude and longitude within the continental U.S., a Rn-222 concentration was estimated. The accuracy of the estimate was dependent on a number of factors including map surface scale (U.S., regional, or state scale), closeness of measurements to the point of interest, and the algorithm used to generate the surface matrix. The accuracy of the estimate increased going from the U.S. scale (more localized averaging was required) to the regional scale and then to the state scale (less localized averaging was required). While computer artifacts were generated where measurements were lacking, this approach shows promise in making a first cut prediction. As the Rn-222 data base increases in coverage, the accuracy of the model should increase. Similar predictions can be made for other radioactivity in water supplies. These estimates are potentially less reliable since the data bases are much smaller and have much less coverage than for Rn-222. While no specific examples of this approach are given in this paper, it is anticipated that such examples and further applications of this technique will be the subject of a future paper.

5.0 SUMMARY AND CONCLUSIONS

Based on the results of this study and previous studies involving limited areas of the U.S., no widespread areas with highly elevated Rn-222 in public groundwater systems were observed. Only localized areas of the eastern U.S. showed relatively high levels of Rn-222 (10,000 pCi/l and above). The reader is cautioned that only public groundwater supplies serving 1000 or more people were sampled (see Section 2.0). Pilot study results (He84) indicated smaller public groundwater supplies on the average tend to have higher radon levels.

Based on the results of this study, 1.6 percent of the people served by public groundwater systems in the contiguous 48 States (approximately 1.15 million people) are served by drinking water supplies exceeding the EPA maximum contaminant level of 5 pCi/l for radium. Some water supplies not sampled in the study are also reported to exceed the 5 pCi/l level.

Based on the results of this study, 0.45 percent of the people served by public groundwater systems in the contiguous 48 States (approximately 0.31 million people) are served by drinking water supplies exceeding the 10 pCi/l level for uranium suggested by an EPA/ODW Health Advisory (La 83). Some groundwater supplies not sampled in the study could exceed the 10 pCi/l level, especially where the earth's crust is enriched in uranium.

Based on the results of this study, thorium levels were shown to be extremely small in public groundwater supplies. Water supplies having thorium concentrations exceeding 0.1 pCi/l would be unusual and those exceeding 1.0 pCi/l would be extremely rare (pilot study results).

As with any survey that only samples a limited number within the overall population available for sampling, some biases will occur in the final analysis of results. In the case of radium and uranium results, the reported results consisted of those samples which exceeded a 3 pCi/l gross alpha screening level. The results of this survey are applicable to the upper end of the distribution function for radium and uranium in public groundwater supplies. Therefore, for the most part, the lower end of the distribution function has been excluded in this survey of radium and uranium levels.

6.0 RECOMMENDATIONS

The following recommendations are made regarding future work involving natural radioactivity in public groundwater supplies:

1. No more widespread sample collection should be undertaken at this time. In the future, special studies may be appropriate in localized, high activity areas.

2. Analyze remaining samples for Ra-226, Ra-228, U-234, and U-238 or randomly select a nominal 500 samples for further analysis since less than 17 percent of the samples collected in this study were analyzed for Ra-226, less than 5 percent for Ra-228, and less than 15 percent for U-234 and U-238. By increasing the size of the database, more representative average values will be obtained.

3. Analyze all samples for Pb-210 in which the gross alpha and gross beta exceed 5 pCi/l (400-500 samples) in order to establish a Pb-210 database.

4. Consult the U.S. Geological Survey and state geological surveys for data and information on natural radioactivity in groundwater.

5. Gather data from other databases of natural radioactivity such as those maintained by each state to meet the requirements of the Safe Drinking Water Act for radionuclides (EPA76, FR76). States are only required to report violations. This additional data (data from water supplies not in violation) would be very helpful in predictive modeling efforts.

6. Develop predictive models of natural radioactivity in groundwater based on geology. Such models might be based on all available data relating natural radioactivity to rock type and used for predicting levels in groundwater and the resulting dose and health effects associated with these levels.

REFERENCES

AL75 Aldrich, L.K., Sasser, M.K., and Conners, D.A., 1975, "Evaluation of Radon Concentrations in North Carolina Ground Water Supplies," State of North Carolina, Department of Human Resources.

Cl83 Cline, W., Adamovitz, S., Blackman, C., and Kahn, B., 1983, "Radium and Uranium Concentrations in Georgia Community Water Systems," Health Physics 44, 1-12.

Co83 Cothern, C.R. and Lappenbusch, W.L., 1983, "Occurrence of Uranium in Drinking Water in the U.S.," Health Physics 45, 89-99.

DoI79 Department of Interior, Bureau of Mines, Division of Automatic Data Processing, Denver, Colorado, 1979, Minerals Industry Location System (MILS) computer tapes of U.S. mines.

Dr81 Drury, J.S., Reynolds, S., Owen, P.T., Ross, R.H., and Ensminger, J.T., 1981, "Uranium in U.S. Surface, Ground, and Domestic Water," EPA-570/9-81-001 (Volumes 1-4).

EPA76 U.S. Environmental Protection Agency, 1976, "National Interim Primary Drinking Water Regulations," EPA-570/9-76-003.

EPA80 U.S. Environmental Protection Agency, 1980, Office of Drinking Water, FRDS listing of public groundwater systems serving 1000 or more people (FY79).

FR76 Federal Register, 1976, "Drinking Water Regulations-Radionuclides," U.S. Environmental Protection Agency, July 9, 1976, Title 40, Part 141, 28402-28409.

He79 Hess, C.T., Norton, S.A., Brutsaert, W.F., Casparius, R.E., Coombs, E.G., and Hess, A.L., 1979, "Radon-222 in Potable Water Supplies in Maine: The Geology, Hydrology, Physics and Health Effects," Land and Water Resources Center, University of Maine at Orono, Completion Report Project A-045-ME Contract A-272-A.

He84 Hess, C.T., Michel, J., Horton, T.R., Prichard, H.M., and Coniglio, W.A., 1984, "The Occurrence of Radioactivity in Public Water Supplies in the United States," to be published in Health Physics.

Ho83 Horton, T.R., 1983, "Methods and Results of EPA's Study of Radon in Drinking Water," EPA 520/5-83-027.

Ka77 Kaufmann, R.F. and Bliss, J.D., 1977, "Effects of Phosphate Mineralization and the Phosphate Industry on Radium-226 in Ground Water of Central Florida," EPA/520-6-77-010.

Kn84 Knight, M.J. and McCroan, K.D., 1984, " Two and Three Dimensional Plotting of Geographic Data", an internal EERF report.

La83 Lappenbusch, William L., 1983, U.S. EPA National Workshop on Radioactivity in Drinking Water, May 24-26, 1983, Easton, Maryland. U.S. Environmental Protection Agency, Office of Drinking Water, Washington, D.C., 20460.

Mc82 McHugh, J.B. and Miller, W.R., 1982, "Radon Survey of Ground Waters from Beaver and Milford Basins, Utah," United States Department of the Interior, Geological Survey, Open-File Report 82-382.

Mi80 Michel, J., and Moore, W.S., 1980, "^{228}Ra and ^{226}Ra Content of Groundwater in Fall Line Aquifiers," Health Physics 38, 663-671.

Mi81 Michel, J., King, P.T., and Moore, W.S., 1981, "^{228}Ra, ^{226}Ra and ^{222}Rn in South Carolina Ground Water: Measurement Techniques and Isotope Relationships," Department of Geology, University of South Carolina.

Mi83 Michel, J., personal communication, 1983.

NM80 State of New Mexico, 1980, "Chemical Quality of New Mexico Community Water Supplies-1980," Environmental Improvement Division, Water Supply Section.

Pr77 Prichard, H.M. and Gesell, T.F., 1977, "Rapid Measurements of Rn-222 Concentrations in Water with a Commercial Liquid Scintillation Counter," Health Physics 33, 577-581.

Pr79 Prichard, H.M., 1979. Unpublished radon results. The University of Texas, School of Public Health.

Pr81 Prichard, H.M. and Gesell, T.F., 1981, "An Estimate of Population Exposures Due to Radon in Public Water Supplies in the Area of Houston, Texas," Health Physics 41, 599-606.

Pr83 Prichard, H.M. and Gesell, T.F., 1983, "Radon-222 in Municipal Water Supplies in the Central United States," Health Physics 45, 991-993.

St80 Straub, Conrad P., personal communication, October 10, 1980.

APPENDIX A

ADDITIONAL INFORMATION ON THE STUDY DESIGN

Exhibit A.1

PROCUREMENT STATEMENT*

Using the supplies and equipment provided by the EERF, ____________ public water supplies shall be sampled for radon. In addition to the radon samples, a water sample shall be collected for possible analysis for other radionuclides. All samples shall be promptly returned to the EERF using the boxes and mailing tubes supplied by EERF. The enclosed list of public water supplies specifies which supplies to sample. Only these supplies shall be sampled and reimbursed under this agreement. All samples shall be collected within six (6) months following receipt of a sampling list from the EERF. The Project Officer shall receive a monthly progress report during the six-month sampling period outlining the status of sampling and any problems which could delay completion of the sampling plus steps taken to overcome these problems. At the completion of the sampling program the sampling kit shall be returned to the EERF unless otherwise instructed. Also, within one month after the final sample is collected, the Project Officer shall receive a complete summary of sampling data to include the name of the supply; date sampled; information on the well such as depth, aquifer being pumped, etc.; type of water treatment; population served; and other pertinent data as may be available. The data and information developed under this contract shall not be published or made publicly available without the written consent of the Project Officer.

* Samples were collected by state health department personnel using this procurement statement as a guide.

Exhibit A.2

Rn/Water
SAMPLING AND ANALYSIS FORM
(PUBLIC WATER SYSTEM - GROUNDWATER SUPPLIES)

FINISHED WATER ONLY ! ! !

Date:______________ Time of Collection: ____________ Sample #: ___________

PWS ID#: __________ PWS Name: ____

Location: ____

Consumer tap, individual well, or other sample (CIRCLE ONE). If individual well sample, give well name: ____________________. If other sample, specify where taken _________________________. If multiple well PWS, include Page 2.

Description of Source:

Number of wells supplying PWS ____________ ***POPULATION SERVED BY PWS:
Well Depth(s) ____________
Aquifer being pumped ____________ ______________________
Water treatment ____________

Additional Information: ____
____

Sample Collected By: Name: ____
Address: _______________________________________
____

TO BE COMPLETED AT EERF:

Date Received: _________ Start Count: # _______ Time: _______ Day: _______
# _______ Time: _______ Day: _______

Instrument Parameters:
Sample Changer No.'s _______ & _______ Length of Count: _______ min.
Gain: 1.0 or other _______ Bkg.: ________________ c/m
A Channel: Lower: 0.1 Upper: 10.0 Eff.: ________________cpm/pCi
or Other Lower: _______ Upper: _______

Results:

Sample #	Count Rate(c/m)	Net Count Rate(c/m)	Decay Corr.	Conc.(pCi/l)$\pm 2\sigma$(%)

Exhibit A.2 (continued)

PUBLIC WATER SYSTEM SUPPLIED BY MORE THAN ONE WELL

IMPORTANT: ATTACH TO Rn/WATER SAMPLING AND ANALYSIS FORM! ! !

IF POSSIBLE, PLEASE PROVIDE THE FOLLOWING INFORMATION:

PWS ID#: ________________

NAME OF INDIVIDUAL WELL	WELL DEPTH	% OF PWS POPULATION SERVED BY THIS WELL	IF SYSTEM SAMPLE TAKEN, IS THIS WELL CONTRIBUTING TO THE SAMPLE? (YES OR NO)	WATER-TREATMENT

Exhibit A.3

SAMPLE COLLECTION CRITERIA
(Finished Water Only)

Single Well Public Water System

Preferred Method:	One set of water samples at consumer tap. (Try to collect samples as close to the water supply as possible.)
Alternative:	One set of water samples from well, storage tank, or other suitable finished water sampling point. (Specify where taken)

Multiple Well Public Water System

Preferred Method:	One set of water samples at consumer tap. (Try to collect samples close to the beginning of the distribution system, e.g., near water treatment plant and/or storage tanks.)
Alternative α1:	One set of water samples from individual well serving largest percent of public water system population (finished water only).
Alternative α2:	One set of water samples from any other suitable finished water sampling point (specify where taken).

Definition:	One set of water samples means a one (1) gallon cubitainer of water plus two (2) liquid scintillation vials for radon in water samples.
Note:	The EPA is trying to collect samples that can be used in nationwide and state averages, i.e., baseline data. The data may also serve as a screening device for identifying areas warranting more detailed and comprehensive studies at a later date (St80).

APPENDIX B

RADIOACTIVITY RESULTS FOR EACH PUBLIC WATER SYSTEM SAMPLED

Note: All concentration and counting error results are computer generated resulting in numbers that are less accurate than what is presented (i.e., up to five significant figures are implied). All results should be rounded off to no more than three significant figures when using these results.

Table B.1 Natural radioactivity in public water systems-Alabama

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN22671	AL:ABBEVILLE	51882	57.9	47.5	0.5	1.0	2.0	1.1	NA		NA		NA		NA	
USRN24425	AL:ALABASTER	8 582	228.9	49.2	0.4	0.6	0.0	0.1	NA		NA		NA		NA	
USRN24175	AL:ALEXANDRIA	72782	24.2	49.7	0.2	0.5	0.5	0.7	NA		NA		NA		NA	
USRN24414	AL:ALICEVILLE	8 382	152.8	58.0	0.6	0.6	2.0	0.9	NA		NA		NA		NA	
USRN23979	AL:ANDALUSIA	72182	76.9	49.2	0.8	2.3	4.4	3.9	NA		NA		NA		NA	
USRN24177	AL:ANNISTON	72782	450.9	56.3	0.2	0.3	1.2	0.8	NA		NA		NA		NA	
USRN23077	AL:ATMORE	6 982	57.3	59.2	0.3	0.3	0.7	0.7	NA		NA		NA		NA	
USRN22672	AL:BAKERHILL	51882	251.1	51.5	0.5	0.3	0.8	0.6	NA		NA		NA		NA	
USRN23078	AL:BAY MINETTE	6 982	2.2	58.1	0.6	0.3	1.0	0.6	NA		NA		NA		NA	
USRN23070	AL:BAYOU LA BATRE	6 882	145.3	74.8	1.0	0.4	1.0	0.6	NA		NA		NA		NA	
USRN23070X	AL:BAYOU LA BATRE	6 882	136.3	67.4	0.7	0.4	1.7	0.8	NA		NA		NA		NA	
USRN22934	AL:BRENT	6 382	340.0	54.4	1.1	0.6	0.7	0.6	NA		NA		NA		NA	
USRN23075	AL:BREWTON	6 982	61.9	59.3	0.5	0.6	4.1	1.3	NA		NA		NA		NA	
USRN22674	AL:BRUNDIDGE	51882	106.5	48.2	0.1	0.5	0.4	1.0	NA		NA		NA		NA	
USRN22930	AL:CALERA	6 382	155.0	84.3	0.2	0.4	0.1	0.6	NA		NA		NA		NA	
USRN22930X	AL:CALERA	6 382	86.1	48.9	0.6	0.5	-0.1	3.0	NA		NA		NA		NA	
USRN24452	AL:CARROLLTON	8 382	26.2	55.1	0.2	0.6	2.0	1.0	NA		NA		NA		NA	
USRN24179	AL:CHILDERSBURG	72782	132.8	51.5	0.1	0.7	1.0	0.9	NA		NA		NA		NA	
USRN24423	AL:COLUMBIANA	8 582	53.8	46.9	-0.1	0.4	0.8	1.0	NA		NA		NA		NA	
USRN23085	AL:DAPHNE	6 882	50.6	65.3	0.5	0.3	1.5	0.8	NA		NA		NA		NA	
USRN24413	AL:DEMOPOLIS	8 382	99.9	57.5	0.3	2.4	-0.1	0.0	NA		NA		NA		NA	
USRN22673	AL:DOTHAN	51882	60.3	47.5	0.7	0.7	2.4	1.1	NA		NA		NA		NA	
USRN23076	AL:EAST BREWTON	6 982	36.6	58.4	0.3	0.5	3.8	1.3	NA		NA		NA		NA	
USRN23986	AL:ELBA	72182	68.1	47.0	0.5	0.8	2.2	1.2	NA		NA		NA		NA	
USRN22928	AL:ELMORE	6 382	24.7	47.8	0.5	0.5	2.7	0.9	NA		NA		NA		NA	
USRN23983	AL:ENTERPRISE	72182	37.0	46.6	0.3	0.6	2.1	1.1	NA		NA		NA		NA	
USRN22676	AL:EUFAULA	51882	186.9	49.5	-0.4	0.8	0.4	1.0	NA		NA		NA		NA	
USRN23073	AL:EVERGREEN	6 882	33.0	56.2	0.3	0.6	0.1	0.6	NA		NA		NA		NA	
USRN23074	AL:FAIRHOPE	6 882	41.8	65.4	0.3	0.3	1.5	0.8	NA		NA		NA		NA	
USRN23984	AL:FLORALA	72182	89.6	49.4	0.1	0.4	0.5	0.7	NA		NA		NA		NA	
USRN23083	AL:FOLEY	6 982	110.6	60.2	2.5	0.7	2.5	0.8	0.7	0.0	NA		0.0	0.0	0.0	0.0
USRN22670X	AL:FT. RUCKER	51882	38.5	46.7	0.1	0.5	1.2	1.1	NA		NA		NA		NA	
USRN22670	AL:FT. RUCKER	51882	45.8	50.1	0.3	0.5	1.5	1.0	NA		NA		NA		NA	
USRN23980X	AL:GENEVA	72182	104.6	50.2	0.7	0.7	2.6	1.2	NA		NA		NA		NA	
USRN23980	AL:GENEVA	72182	103.8	56.8	0.2	0.6	3.1	1.3	NA		NA		NA		NA	
USRN24176	AL:GLENCOE	72782	118.5	51.5	0.6	0.6	0.5	0.6	NA		NA		NA		NA	
USRN23071	AL:GRAND BAY	6 882	36.6	46.6	1.4	0.5	4.2	1.0	NA		NA		NA		NA	
USRN24412	AL:GREENSBORO	8 382	20.1	55.5	0.4	0.3	3.5	1.0	NA		NA		NA		NA	
USRN23069	AL:GREENVILLE	6 882	88.0	57.4	0.0	0.0	1.9	2.2	NA		NA		NA		NA	
USRN23084	AL:GULF SHORES	6 982	201.1	61.9	0.5	0.5	2.4	0.9	NA		NA		NA		NA	
USRN24416	AL:HAMILTON	8 382	67.9	55.7	0.8	0.5	2.9	1.0	NA		NA		NA		NA	
USRN24419	AL:HANCEVILLE	8 482	-7.3	47.6	0.4	0.6	2.0	0.9	NA		NA		NA		NA	
USRN23985	AL:HARTFORD	72182	129.7	48.4	0.4	0.5	1.3	0.9	NA		NA		NA		NA	
USRN22669	AL:HEADLAND	51882	68.7	48.2	2.6	1.1	1.8	0.9	0.3	0.0	NA		0.0	0.0	0.0	0.0
USRN24181	AL:HOKES BLUFF	72782	87.9	50.4	0.4	0.5	0.6	0.7	NA		NA		NA		NA	
USRN22929	AL:HOLTVILLE	6 382	10.1	47.9	0.2	0.3	1.9	0.9	NA		NA		NA		NA	
USRN24421	AL:IRONDALE	8 582	218.2	48.9	0.8	0.6	0.1	0.3	NA		NA		NA		NA	
USRN24174	AL:JACKSONVILLE	72782	112.5	51.1	0.7	0.5	1.4	0.8	NA		NA		NA		NA	
USRN24417	AL:KILLEN	8 482	472.3	56.3	0.5	0.4	0.9	0.7	NA		NA		NA		NA	
USRN22714	AL:LADONIA	52082	241.9	44.7	0.2	0.4	2.1	0.9	NA		NA		NA		NA	
USRN24428	AL:LEEDS	8 582	586.1	55.7	0.7	0.8	0.4	0.9	NA		NA		NA		NA	
USRN23982	AL:LUVERNE	72182	79.9	49.6	0.3	1.1	2.4	2.0	NA		NA		NA		NA	
USRN24418	AL:MADISON	8 482	506.9	58.2	0.2	0.3	-0.1	1.0	NA		NA		NA		NA	

Table B.1 Natural radioactivity in public water systems-Alabama (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN24411	AL:MARION	8 382	39.7	56.0	0.5	0.4	2.9	1.0	NA		NA		NA		NA	
USRN24427	AL:MCCALLA	8 582	505.1	52.9	0.5	0.6	0.3	0.6	NA		NA		NA		NA	
USRN22927	AL:MILLBROOK	6 382	59.6	48.6	0.3	0.4	0.4	0.6	NA		NA		NA		NA	
USRN23082	AL:MONROEVILLE	6 882	161.4	68.7	0.0	0.0	2.1	2.0	NA		NA		NA		NA	
USRN22932	AL:MONTEVALLO	6 382	154.6	50.2	0.8	0.8	0.4	0.7	NA		NA		NA		NA	
USRN22931	AL:MONTEVALLO	6 382	276.2	52.8	0.7	0.8	0.4	0.9	NA		NA		NA		NA	
USRN23981	AL:OPP	72182	100.2	49.9	0.2	0.5	0.5	0.9	NA		NA		NA		NA	
USRN23072	AL:ORANGE BEACH	6 982	39.8	58.9	4.2	0.8	0.2	0.1	0.9	0.0	NA		0.0	0.0	0.0	0.0
USRN22675	AL:OZARK	51882	65.2	47.6	0.2	0.6	0.6	1.0	NA		NA		NA		NA	
USRN24424	AL:PELHAM	8 582	284.6	51.0	-0.1	0.5	0.7	0.9	NA		NA		NA		NA	
USRN24178	AL:PELL CITY	72782	207.2	52.8	2.1	0.8	0.1	0.1	0.4	0.0	NA		0.2	0.1	0.1	0.0
USRN22035*	AL:PHENIX CITY	41682	-18.1	43.0	0.0	0.3	1.9	0.9	NA		NA		NA		NA	
USRN24426	AL:PRATTVILLE	8 582	99.9	47.8	0.0	0.0	2.4	1.0	NA		NA		NA		NA	
USRN23080	AL:SARALAND	6 882	156.1	90.5	0.5	0.4	1.1	0.7	NA		NA		NA		NA	
USRN23080X	AL:SARALAND	6 882	94.9	67.0	0.8	0.4	0.7	0.6	NA		NA		NA		NA	
USRN23081	AL:SATSUMA	6 882	23.0	65.6	0.3	0.4	0.8	0.7	NA		NA		NA		NA	
USRN24410	AL:SELMA	8 382	31.9	60.5	0.5	0.4	5.3	1.1	NA		NA		NA		NA	
USRN24410X	AL:SELMA	8 382	29.6	56.4	0.6	0.4	4.8	1.2	NA		NA		NA		NA	
USRN24409	AL:SELMA	8 382	285.2	59.7	0.7	0.6	4.3	1.2	NA		NA		NA		NA	
USRN22717	AL:SMITHS	52082	22.6	40.9	0.2	0.3	1.8	1.0	NA		NA		NA		NA	
USRN23079	AL:THEODORE	6 882	142.5	67.7	0.5	1.1	3.3	2.1	NA		NA		NA		NA	
USRN22668	AL:TROY	51882	67.5	48.2	0.2	0.7	2.9	1.3	NA		NA		NA		NA	
USRN24422	AL:TRUSSVILLE	8 582	367.6	51.2	0.1	0.5	-0.2	1.4	NA		NA		NA		NA	
USRN22715	AL:UNION SPRINGS	52082	174.9	43.7	1.7	0.9	-0.1	0.5	NA		NA		NA		NA	
USRN22716	AL:UNION SPRINGS	52082	154.8	43.3	0.4	0.5	0.3	0.6	NA		NA		NA		NA	
USRN24415	AL:VERNON	8 382	19.3	55.1	0.0	0.2	2.2	1.0	NA		NA		NA		NA	
USRN24180	AL:WEAVER	72782	124.0	61.8	0.5	0.6	0.4	0.8	NA		NA		NA		NA	
USRN24180X	AL:WEAVER	72782	110.7	50.8	0.0	0.0	1.3	0.9	NA		NA		NA		NA	
USRN22933	AL:WEST BLOCTON	6 382	63.9	48.2	0.1	0.4	0.4	0.7	NA		NA		NA		NA	

* Surface water supply; all others are groundwater supplies.

Table B.2 Natural radioactivity in public groundwater systems-Arizona

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN12339	AZ:APACHE JUNCTION	41581	135.8	107.9	0.2	0.6	7.0	1.5	NA		NA		NA		NA	
USRN13455	AZ:ARIZONA CITY	52981	308.6	77.8	6.6	2.2	4.4	1.6	0.1	0.0	NA		4.4	0.4	3.1	0.3
USRN12940	AZ:AVONDALE	43081	NA		-0.9	1.9	7.8	5.0	NA		NA		NA		NA	
USRN13631	AZ:AVONDALE	6 481	251.3	110.1	1.2	2.3	9.7	4.6	NA		NA		NA		NA	
USRN12940X	AZ:AVONDALE	43081	NA		-0.6	2.0	8.1	4.6	NA		NA		NA		NA	
USRN12638	AZ:BISBEE	42881	487.4	78.4	3.0	1.0	2.0	0.6	0.1	0.0	NA		2.0	0.3	0.3	0.1
USRN12960	AZ:BUCKEYE	43081	1021.0	158.3	1.3	2.8	1.1	3.9	0.3	0.0	NA		NA		NA	
USRN12991	AZ:BUCKEYE	43081	372.9	130.3	0.0	0.0	1.4	4.0	NA		NA		NA		NA	
USRN12960X	AZ:BUCKEYE	43081	1005.5	140.8	5.4	4.0	3.0	3.2	NA		NA		1.7	0.2	1.2	0.1
USRN11544	AZ:CAREFREE	31881	2228.5	111.4	0.2	0.6	7.0	1.0	NA		NA		NA		NA	
USRN11432	AZ:CASA GRANDE	31081	544.2	54.4	20.0	5.4	6.0	1.9	0.1	0.0	NA		12.8	1.1	9.8	0.9
USRN11539	AZ:CAVE CREEK	31881	1356.5	95.0	5.0	1.4	3.0	0.7	0.2	0.0	NA		4.5	0.5	2.6	0.3
USRN11431	AZ:COOLIDGE	31081	249.1	48.6	13.0	4.7	7.0	2.7	0.1	0.0	NA		11.4	1.0	6.2	0.6
USRN11428	AZ:COOLIDGE	31081	241.9	49.6	4.0	1.8	3.0	1.3	0.1	0.0	NA		2.2	0.2	1.3	0.2
USRN11934	AZ:DOUGLAS	4 781	369.1	51.5	3.0	1.2	2.0	0.6	0.1	0.0	NA		3.0	0.3	0.7	0.1
USRN11546	AZ:EL MIRAGE	31781	128.1	110.4	0.6	0.6	5.0	1.0	NA		NA		NA		NA	
USRN11492	AZ:ELOY	31981	195.2	61.7	4.0	1.2	2.0	0.5	0.2	0.0	NA		2.5	0.3	1.2	0.1
USRN11522	AZ:FLORENCE	31881	236.0	42.3	1.0	1.1	4.0	1.3	NA		NA		NA		NA	
USRN11408	AZ:FLORENCE	31881	251.1	43.0	3.0	2.8	4.0	2.8	0.1	0.0	NA		NA		NA	
USRN11491	AZ:FLORENCE	31881	197.8	42.3	2.0	1.8	14.0	2.1	NA		NA		NA		NA	
USRN11545	AZ:FOUNTAIN HILLS	31881	728.1	97.3	5.0	1.3	4.0	0.7	0.1	0.0	NA		2.4	0.3	1.0	0.1
USRN13352	AZ:GILA BEND	52281	279.6	133.3	-0.4	2.1	9.7	4.8	NA		NA		NA		NA	
USRN11538	AZ:GLENDALE	31781	386.8	107.7	0.4	1.3	3.0	1.4	NA		NA		NA		NA	
USRN11429	AZ:GLOBE	31381	310.5	92.7	1.0	0.7	2.0	0.6	NA		NA		NA		NA	
USRN12990X	AZ:GOODYEAR	43081	203.6	123.7	1.1	0.7	3.0	1.0	NA		NA		NA		NA	
USRN12990	AZ:GOODYEAR	43081	83.5	139.2	1.8	0.9	1.8	0.8	NA		NA		NA		NA	
USRN12085	AZ:HAYDEN	4 981	113.7	90.2	1.0	0.7	1.0	0.6	NA		NA		NA		NA	
USRN11840	AZ:HUACHUCA	4 281	-59.1	1249.5	0.1	0.6	2.0	0.6	NA		NA		NA		NA	
USRN11840X	AZ:HUACHUCA	4 281	0.0	650.2	0.3	0.5	0.3	0.5	NA		NA		NA		NA	
USRN12082	AZ:KEARNEY	4 981	310.9	92.8	2.0	3.5	6.0	3.9	NA		NA		NA		NA	
USRN12959	AZ:LITCHFIELD PARK	43081	194.0	156.9	2.2	2.3	2.5	3.6	NA		NA		NA		NA	
USRN11547	AZ:LITCHFIELD PARK	31881	64.2	91.6	5.0	2.0	3.0	1.1	0.1	0.0	NA		3.1	0.3	1.8	0.2
USRN12084	AZ:MAMMOTH	4 981	580.9	95.8	2.0	0.9	2.0	0.6	NA		NA		NA		NA	
USRN11430	AZ:MIAMI	31381	291.7	112.1	3.0	0.9	5.0	0.8	NA		NA		NA		NA	
USRN11430X	AZ:MIAMI	31381	259.5	90.8	3.0	1.0	7.0	0.9	0.1	0.0	NA		NA		NA	
USRN12441	AZ:NOGALES	42181	396.4	72.8	4.0	1.5	5.0	1.1	0.1	0.0	NA		4.2	0.4	3.3	0.3
USRN12442	AZ:NOGALES	42181	253.2	67.5	2.0	1.0	2.0	0.7	NA		NA		NA		NA	
USRN12276	AZ:ORACLE	4 981	210.8	90.7	1.3	0.7	2.0	0.8	NA		NA		NA		NA	
USRN11542	AZ:PARADISE VALLEY	31881	242.5	114.4	3.0	1.1	2.0	0.7	NA		NA		NA		NA	
USRN13632	AZ:PARKER	6 281	463.4	155.2	-0.6	1.7	5.9	5.4	NA		NA		NA		NA	
USRN12685	AZ:PAYSON	42881	6118.5	123.0	0.1	0.3	1.7	0.9	NA		NA		NA		NA	
USRN11370	AZ:PHOENIX	31781	153.1	172.3	0.5	0.6	2.0	0.5	NA		NA		NA		NA	
USRN11540X	AZ:PHOENIX	31781	311.9	143.3	1.0	0.6	2.0	0.6	NA		NA		NA		NA	
USRN11370X	AZ:PHOENIX	31781	335.3	105.0	0.8	0.6	2.0	0.6	NA		NA		NA		NA	
USRN11543	AZ:PHOENIX	31781	233.9	104.8	1.0	0.6	4.0	0.8	NA		NA		NA		NA	
USRN11540	AZ:PHOENIX	31781	504.9	429.7	0.7	0.6	2.0	0.5	NA		NA		NA		NA	
USRN13020X	AZ:PICACHO	5 781	137.5	93.0	1.8	1.0	1.7	0.8	NA		NA		2.3	0.2	1.2	0.1
USRN13020	AZ:PICACHO	5 781	NA		2.7	1.0	1.8	0.8	0.2	0.0	NA		NA		NA	
USRN12686	AZ:PINE	42781	-51.6	83.6	0.5	0.4	1.6	0.9	NA		NA		NA		NA	
USRN12684	AZ:PINE	42781	226.3	88.2	1.9	0.8	1.2	0.7	0.2	0.0	NA		1.6	0.2	0.2	0.1
USRN12683	AZ:PRESCOTT	42781	859.9	98.7	1.9	0.9	1.1	0.7	0.1	0.0	NA		1.3	0.2	0.4	0.1
USRN11541	AZ:SCOTTSDALE	31881	433.3	121.1	2.0	0.9	2.0	0.5	NA		NA		NA		NA	
USRN14695	AZ:SIERRA VISTA	71581	535.9	80.4	1.9	0.8	1.2	0.7	NA		NA		NA		NA	

Table B.2 Natural radioactivity in public groundwater systems-Arizona (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/1)	2SIGMA ERROR	ALPHA (pCi/1)	2SIGMA ERR	BETA (pCi/1)	2SIG ERR	Ra-226 (pCi/1)	2SIGMA ERR	Ra-228 (pCi/1)	2SIGMA ERR	U-234 (pCi/1)	2SIGMA ERR	U-238 (pCi/1)	2SIGMA ERROR
USRN12244	AZ:SIERRA VISTA	41481	1153.0	92.2	1.0	0.6	2.0	1.1	NA		NA		NA		NA	
USRN11403	AZ:SIERRA VISTA	31781	608.2	48.7	2.0	0.8	0.3	0.2	NA		NA		NA		NA	
USRN12243	AZ:SIERRA VISTA	41481	313.3	81.4	1.0	0.5	0.9	0.7	NA		NA		NA		NA	
USRN14694	AZ:SIERRA VISTA	71581	743.8	81.9	1.7	0.8	1.1	0.8	NA		NA		NA		NA	
USRN13351	AZ:SOMERTON	52281	265.1	126.4	-2.8	3.1	6.6	4.7	NA		NA		NA		NA	
USRN11521	AZ:SUN CITY	31081	561.1	56.1	3.0	1.8	3.0	1.4	NA		NA		NA		NA	
USRN11369	AZ:SUN CITY	31781	310.1	142.5	2.0	1.0	1.0	0.4	NA		NA		NA		NA	
USRN11368	AZ:SUN CITY	31781	708.5	113.1	3.0	1.0	2.0	0.5	NA		NA		NA		NA	
USRN11404	AZ:SUPERIOR	31381	30.9	89.3	0.5	0.6	3.0	0.8	NA		NA		NA		NA	
USRN13225	AZ:TOLLESON	43081	57.2	153.2	1.0	2.8	6.2	4.5	NA		NA		NA		NA	
USRN16431	AZ:TUCSON	92881	460.7	78.3	0.3	0.4	1.7	0.9	NA		NA		NA		NA	
USRN21224	AZ:TUCSON	3 282	53.1	60.5	-0.1	0.7	1.2	1.1	NA		NA		NA		NA	
USRN16430X	AZ:TUCSON	92881	416.2	78.9	3.2	1.1	1.4	0.7	0.2	0.0	NA		2.3	0.3	1.0	0.2
USRN12083	AZ:TUCSON	4 981	201.8	88.8	2.0	0.8	1.0	0.4	NA		NA		NA		NA	
USRN16430	AZ:TUCSON	92881	383.4	82.0	4.9	1.4	1.6	0.7	NA		NA		2.1	0.3	1.0	0.1
USRN21225	AZ:TUCSON	3 282	262.1	72.5	0.2	0.6	1.0	1.1	NA		NA		NA		NA	
USRN13019	AZ:TUCSON	5 781	434.3	101.0	2.0	2.9	-0.9	8.1	0.2	0.0	NA		2.6	0.3	1.5	0.2
USRN21226	AZ:TUCSON	3 282	19.7	60.3	1.6	0.8	1.4	0.8	NA		NA		NA		NA	
USRN21227	AZ:TUCSON	3 282	246.9	62.7	0.9	0.5	0.1	0.3	NA		NA		NA		NA	
USRN21223	AZ:TUCSON	3 282	326.4	63.6	0.4	0.6	0.5	0.9	NA		NA		NA		NA	
USRN13350	AZ:YUMA	52281	69.0	128.6	1.1	1.6	6.5	2.3	NA		NA		NA		NA	
USRN13350X	AZ:YUMA	52281	68.7	124.9	3.4	1.7	4.1	2.1	0.2	0.0	NA		3.4	0.4	1.6	0.2

Table B.3 Natural radioactivity in public groundwater systems-Colorado

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13446	CO:AKRON	52281	231.9	113.2	15.9	3.0	8.6	1.9	0.3	0.0	NA		9.8	0.9	5.7	0.6
USRN12553	CO:AURORA	42181	278.0	128.8	0.2	0.4	2.0	1.3	NA		NA		NA		NA	
USRN12682	CO:AURORA	42281	-129.4	347.3	0.4	0.5	3.5	1.1	NA		NA		NA		NA	
USRN10792	CO:BENTS FORT	12981	36.4	60.6	0.5	1.7	5.2	3.1	NA		NA		NA		NA	
USRN11060	CO:BURLINGTON	21881	NA		8.0	1.4	4.3	0.7	NA		NA		NA		NA	
USRN11060X	CO:BURLINGTON	21881	191.1	79.3	7.0	1.4	4.4	0.8	0.3	0.0	NA		NA		NA	
USRN12637	CO:BYERS	42481	86.4	262.3	0.1	0.6	2.0	0.9	NA		NA		NA		NA	
USRN12552	CO:CASTLE ROCK	41781	779.1	136.3	6.0	1.4	7.0	1.3	0.7	0.0	NA		0.5	0.1	0.4	0.1
USRN11148	CO:CHEROKEE	22681	171.6	62.9	0.0	0.0	2.0	0.6	NA		NA		NA		NA	
USRN11061	CO:CHEYENNE WELLS	21881	239.9	77.6	7.0	1.4	4.0	0.7	0.2	0.0	NA		NA		NA	
USRN11837	CO:COLORADO CITY	32081	505.0	173.4	2.0	0.8	2.0	0.5	NA		NA		NA		NA	
USRN12550	CO:COMMERCE CITY	42081	124.0	125.6	13.0	4.3	7.0	3.5	0.2	0.0	NA		9.7	1.0	7.1	0.7
USRN12550X	CO:COMMERCE CITY	42081	153.7	101.3	16.0	4.8	2.0	1.6	NA		NA		NA		NA	
USRN10833	CO:EADS	12881	251.5	71.7	15.0	5.8	7.1	2.7	0.1	0.0	NA		9.0	0.8	6.4	0.6
USRN13629	CO:EATON	52881	848.3	147.3	19.4	5.6	7.1	3.2	0.1	0.0	NA		17.3	1.7	12.0	1.2
USRN12681	CO:ENGLEWOOD	42281	351.6	443.8	0.5	0.6	3.5	1.1	NA		NA		NA		NA	
USRN10796	CO:FOWLER	12681	145.4	91.5	11.0	3.1	0.9	0.5	0.2	0.0	NA		6.9	0.6	4.5	0.4
USRN13628	CO:FT. LUPTON	52781	296.1	192.3	11.4	4.4	13.1	4.5	0.3	0.0	NA		12.4	1.4	9.7	1.1
USRN12639	CO:GLENDALE	42281	141.7	439.4	13.0	4.3	10.0	3.4	0.2	0.0	NA		9.4	1.0	6.2	0.7
USRN13448	CO:HAXTUN	52181	368.8	132.7	3.4	1.0	5.7	1.1	0.2	0.0	NA		2.4	0.3	1.6	0.2
USRN12732	CO:HENDERSON	42081	122.3	99.7	0.1	0.5	0.4	0.8	NA		NA		NA		NA	
USRN10797	CO:HOLLY	12781	752.2	86.3	3.4	1.2	7.3	1.1	1.6	0.1	NA		NA		NA	
USRN13492	CO:HOLYOKE	52181	196.3	126.2	3.3	1.0	3.5	0.9	0.1	0.0	NA		2.1	0.2	1.2	0.1
USRN13449	CO:JULESBURG	52181	121.6	127.5	4.9	4.0	13.7	5.1	0.1	0.0	NA		7.5	0.7	5.2	0.5
USRN10899	CO:LA JUNTA	12981	452.8	63.4	16.0	5.8	4.0	2.0	0.1	0.0	NA		8.0	0.7	5.5	0.5
USRN13630X	CO:LA SALLE	52781	388.8	190.6	18.1	5.2	13.4	4.3	0.2	0.0	NA		18.6	2.2	14.1	1.7
USRN13630	CO:LA SALLE	52781	NA		34.3	7.0	3.2	1.4	NA		NA		NA		NA	
USRN10793	CO:LAMAR	12881	989.2	79.2	8.0	4.0	8.0	3.0	0.1	0.0	NA		3.1	0.3	2.7	0.3
USRN10798	CO:LAS ANIMAS	12781	334.4	81.9	25.0	11.0	9.0	5.0	0.1	0.0	NA		19.8	1.7	13.9	1.2
USRN11062	CO:LIMON	21881	434.4	80.3	2.0	1.3	4.0	1.2	NA		NA		NA		NA	
USRN10832	CO:MAY VALLEY	12781	729.7	87.1	71.3	16.3	2.0	1.3	0.2	0.0	NA		34.8	2.9	29.1	2.5
USRN10795	CO:ORDWAY	12881	176.1	85.4	8.0	3.6	5.0	2.5	0.2	0.0	NA		5.0	0.5	3.2	0.3
USRN12551	CO:PARKER	41781	74.4	125.7	0.6	0.6	6.0	1.4	NA		NA		NA		NA	
USRN12438	CO:SAN LUIS	4 881	2559.5	407.7	2.0	0.7	2.0	0.8	NA		NA		NA		NA	
USRN10794	CO:SPRINGFIELD	12781	492.6	83.8	15.0	4.9	5.0	1.9	0.8	0.0	NA		4.7	0.4	4.8	0.5
USRN11149	CO:STRATTMOOR HILL	22581	832.7	78.8	6.0	1.7	5.0	0.9	0.3	0.0	NA		NA		NA	
USRN11150X	CO:WIDEFIELD	22481	340.7	87.3	8.0	2.4	6.0	1.4	NA		NA		NA		NA	
USRN11150	CO:WIDEFIELD	22481	369.5	335.6	9.0	2.6	7.0	1.4	0.4	0.0	NA		4.8	0.4	3.2	0.3
USRN11147	CO:WOODMAN	22781	231.2	55.1	0.6	0.4	4.0	0.7	NA		NA		NA		NA	
USRN13491	CO:WRAY	52181	242.4	127.0	7.4	2.3	15.4	2.9	0.3	0.0	NA		3.9	0.4	2.5	0.3
USRN13447	CO:YUMA	52281	233.0	113.0	6.6	1.4	5.3	1.0	0.1	0.0	NA		4.1	0.4	2.7	0.3

Table B.4 Natural radioactivity in public groundwater systems-Delaware

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13935	DE:BETHANY BEACH	61281	8.5	100.9	0.1	0.4	3.3	1.1	NA		NA		NA		NA	
USRN13900	DE:BETHANY BEACH	61281	-67.4	110.6	0.6	0.5	2.1	1.0	NA		NA		NA		NA	
USRN13517	DE:BETHANY BEACH	6 181	80.7	76.7	0.7	0.7	3.1	1.1	NA		NA		NA		NA	
USRN13900X	DE:BETHANY BEACH	61281	5.0	102.1	0.1	0.6	2.0	1.0	NA		NA		NA		NA	
USRN13812	DE:BRIDGEVILLE	61081	54.6	102.3	2.4	0.6	0.8	0.4	NA		NA		NA		NA	
USRN13337	DE:CAMDEN WYOMING	51981	318.9	63.8	0.1	0.8	2.5	1.1	NA		NA		NA		NA	
USRN13180X	DE:CLAYTON	51981	344.7	65.5	0.2	0.4	6.9	1.3	0.1	0.0	NA		0.1	0.0	0.0	0.0
USRN13180	DE:CLAYTON	51981	342.0	68.2	0.0	0.0	6.7	1.3	NA		NA		0.0	0.0	0.0	0.0
USRN13451	DE:DAGSBORO	52881	74.4	91.7	0.3	0.3	2.7	1.1	NA		NA		NA		NA	
USRN13230	DE:DELAWARE CITY	52081	47.5	70.1	0.3	0.4	1.5	0.9	NA		NA		NA		NA	
USRN13230X	DE:DELAWARE CITY	52081	55.0	62.2	0.0	0.0	2.2	1.1	NA		NA		NA		NA	
USRN13811	DE:DELMAR	61081	52.5	103.2	0.0	0.3	1.7	1.0	NA		NA		NA		NA	
USRN13181	DE:DOVER	51981	224.8	62.9	0.1	0.5	3.2	1.1	NA		NA		NA		NA	
USRN13178	DE:DOVER AFB	51981	125.9	61.0	0.2	0.6	4.9	1.3	NA		NA		NA		NA	
USRN13901	DE:FREDERICA	61581	100.5	63.1	0.3	0.5	2.9	1.1	NA		NA		NA		NA	
USRN13297	DE:GEORGETOWN	52281	159.9	92.3	0.1	0.2	0.5	0.9	NA		NA		NA		NA	
USRN13814	DE:GEORGETOWN	61181	-112.2	85.4	0.4	0.5	6.0	1.3	NA		NA		NA		NA	
USRN13816	DE:GEORGETOWN	61181	104.3	89.3	2.2	0.5	1.5	0.6	NA		NA		NA		NA	
USRN13140X	DE:HARRINGTON	51981	144.2	61.3	0.1	0.4	2.1	1.0	NA		NA		NA		NA	
USRN13140	DE:HARRINGTON	51981	96.1	64.9	0.2	0.4	1.1	0.8	NA		NA		NA		NA	
USRN13299	DE:LAUREL	52281	60.4	90.1	0.0	0.2	1.6	0.9	NA		NA		NA		NA	
USRN13902	DE:LEWES	61281	156.2	105.3	0.3	0.4	1.2	0.8	NA		NA		NA		NA	
USRN13298	DE:LEWES	52281	-36.4	88.9	0.2	0.3	1.2	0.8	NA		NA		NA		NA	
USRN13295	DE:LEWES	52281	-18.1	62.6	-0.1	0.2	2.0	0.9	NA		NA		NA		NA	
USRN13903	DE:MIDDLETOWN	61581	32.9	60.3	0.3	0.5	3.7	1.2	NA		NA		NA		NA	
USRN13179	DE:MILFORD	51981	20.0	58.4	0.1	0.5	4.9	1.3	NA		NA		NA		NA	
USRN13300X	DE:MILLSBORO	52281	100.0	90.6	0.3	0.3	0.9	0.7	NA		NA		NA		NA	
USRN13300	DE:MILLSBORO	52281	171.9	118.6	0.1	0.3	2.1	0.9	NA		NA		NA		NA	
USRN13296	DE:MILLSBORO	52281	150.4	92.5	0.2	0.4	2.5	1.0	NA		NA		NA		NA	
USRN13293	DE:MILLSBORO	52281	90.4	91.1	0.1	0.2	1.6	0.9	NA		NA		NA		NA	
USRN13292	DE:MILTON	52281	14.0	90.4	0.7	0.4	3.1	0.9	NA		NA		NA		NA	
USRN13231	DE:NEW CASTLE	52081	114.8	63.6	0.4	0.3	0.9	0.7	NA		NA		NA		NA	
USRN13934	DE:NEWARK	61881	-13.6	95.1	1.8	0.6	3.7	1.0	NA		NA		NA		NA	
USRN13222	DE:NEWARK	52081	156.4	64.6	0.2	0.4	1.5	0.9	NA		NA		NA		NA	
USRN13904	DE:OCEANVIEW	61281	25.4	104.6	0.5	0.4	1.3	0.8	NA		NA		NA		NA	
USRN13294	DE:REHOBOTH	52281	262.5	95.2	0.0	0.0	2.0	1.0	NA		NA		NA		NA	
USRN13450X	DE:REHOBOTH	52881	172.4	93.2	0.5	0.7	3.3	1.1	NA		NA		NA		NA	
USRN13450	DE:REHOBOTH	52881	137.3	101.1	0.6	0.7	3.3	1.1	NA		NA		NA		NA	
USRN13815	DE:SEAFORD	61081	102.4	103.8	0.4	0.4	1.2	0.9	NA		NA		NA		NA	
USRN13813	DE:SELBYVILLE	61181	96.3	89.2	0.2	0.4	3.1	1.1	NA		NA		NA		NA	
USRN13182	DE:SMYRNA	51981	13.5	58.2	0.3	0.5	2.4	1.0	NA		NA		NA		NA	
USRN13899	DE:WILMINGTON	61581	120.7	62.1	0.9	0.6	2.8	1.0	NA		NA		NA		NA	

Table B.5 Natural radioactivity in public groundwater systems-Florida

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/1)	2SIGMA ERROR	ALPHA (pCi/1)	2SIGMA ERR	BETA (pCi/1)	2SIG ERR	Ra-226 (pCi/1)	2SIGMA ERR	Ra-228 (pCi/1)	2SIGMA ERR	U-234 (pCi/1)	2SIGMA ERR	U-238 (pCi/1)	2SIGMA ERROR
USRN10524	FL:ALTAMONTE SPRIN	2 381	53.2	47.1	0.4	0.4	0.5	0.4	NA		NA		NA		NA	
USRN10268	FL:APOPKA	12281	86.5	56.1	0.1	0.4	1.3	0.6	NA		NA		NA		NA	
USRN13301	FL:ARCADIA	51981	893.0	196.0	2.4	0.9	2.5	0.9	2.5	0.0	NA		NA		NA	
USRN10993	FL:ATLANTIC BEACH	22581	221.8	106.5	0.5	1.0	3.5	1.4	NA		NA		NA		NA	
USRN13316	FL:AVON PARK	52181	482.4	138.4	0.6	0.5	0.9	0.7	NA		NA		NA		NA	
USRN10252	FL:AZELEA PARK	12081	35.9	46.3	0.3	0.5	0.9	0.6	NA		NA		NA		NA	
USRN11636	FL:BARTOW	32581	46.0	72.5	0.7	0.9	2.0	0.8	NA		NA		NA		NA	
USRN12835	FL:BOCA RATON	42981	-30.2	118.6	-0.1	0.5	0.9	0.9	NA		NA		NA		NA	
USRN12836	FL:BOYNTON BEACH	42981	15.7	118.9	0.3	0.5	1.4	0.9	NA		NA		NA		NA	
USRN13311	FL:CAPE CORAL	52081	-15.7	130.8	2.0	0.9	4.0	1.2	2.5	0.1	NA		NA		NA	
USRN10526	FL:CASSELBERRY	2 381	28.2	46.4	0.6	0.5	1.1	0.6	NA		NA		NA		NA	
USRN13303	FL:CLAIR MEL CITY	51881	-15.8	157.3	1.5	2.5	10.0	4.7	2.4	0.0	NA		0.1	0.0	0.1	0.0
USRN11630	FL:CLEARWATER	32481	71.7	132.0	1.4	0.9	0.7	0.5	NA		NA		NA		NA	
USRN11630X	FL:CLEARWATER	32481	131.2	82.0	2.0	1.1	0.9	0.5	NA		NA		NA		NA	
USRN13033	FL:COCOA	51181	-46.8	72.7	-0.2	0.5	2.1	1.0	NA		NA		NA		NA	
USRN10253	FL:CONWAY MANOR	12081	66.0	46.6	0.4	0.5	1.5	0.6	NA		NA		NA		NA	
USRN12547	FL:COOPER CITY	41481	-22.4	132.3	0.0	0.0	0.7	1.1	NA		NA		NA		NA	
USRN12102	FL:CORAL SPRINGS	4 781	25.5	42.4	0.3	0.7	1.0	0.5	NA		NA		NA		NA	
USRN12103	FL:CORAL SPRINGS	4 781	143.8	51.7	0.4	0.6	2.0	0.6	NA		NA		NA		NA	
USRN03405	FL:CRESTVIEW	121180	121.6	77.9	0.9	0.5	1.3	0.6	NA		NA		NA		NA	
USRN11835	FL:DADE CITY	33181	394.5	82.9	0.3	0.5	0.2	0.5	NA		NA		NA		NA	
USRN12099	FL:DANIA	4 881	9.7	110.8	0.1	0.6	4.0	0.9	NA		NA		NA		NA	
USRN12540X	FL:DAVIE	41481	-34.5	130.5	0.2	0.4	1.9	1.0	NA		NA		NA		NA	
USRN12540	FL:DAVIE	41481	5.5	152.6	0.2	0.6	1.5	0.9	NA		NA		NA		NA	
USRN11484	FL:DAYTONA BEACH	31981	35.6	58.4	0.0	0.0	0.8	0.6	NA		NA		NA		NA	
USRN03403	FL:DE FUNIAK SPRIN	121580	322.1	80.0	0.4	0.3	0.8	0.5	NA		NA		NA		NA	
USRN12212	FL:DEERFIELD BEACH	4 981	150.4	100.3	0.1	0.4	2.0	0.8	NA		NA		NA		NA	
USRN11486	FL:DELAND	31881	228.0	67.1	2.0	1.0	2.0	0.5	NA		NA		NA		NA	
USRN12831	FL:DELRAY BEACH	42981	81.0	120.8	0.2	0.8	2.0	1.1	NA		NA		NA		NA	
USRN11638	FL:DUNEDIN	32481	32.8	80.8	2.0	1.0	2.0	0.5	NA		NA		NA		NA	
USRN03401	FL:EASTPOINT	121580	43.7	38.2	3.2	1.0	5.3	0.8	NA		NA		NA		NA	
USRN13314	FL:ENGLEWOOD	52081	149.2	164.6	0.2	0.5	2.0	1.0	NA		NA		NA		NA	
USRN11634	FL:EUSTIS	32381	21.8	113.3	0.3	0.4	1.0	0.5	NA		NA		NA		NA	
USRN11082	FL:FERNANDINA BEAC	22781	146.6	84.6	0.0	0.0	2.0	1.0	NA		NA		NA		NA	
USRN12371	FL:FLORIDA CITY	41681	122.7	113.4	0.6	0.7	5.0	1.3	NA		NA		NA		NA	
USRN13302	FL:FLORIDA CITY	52181	188.9	135.9	0.6	0.7	6.5	1.4	NA		NA		NA		NA	
USRN13160	FL:FORT PIERCE	51381	224.0	129.6	-0.4	0.5	1.8	1.0	NA		NA		NA		NA	
USRN13160X	FL:FORT PIERCE	51381	269.1	114.9	0.1	0.6	2.2	1.1	NA		NA		NA		NA	
USRN12211	FL:FT. LAUDERDALE	4 981	168.6	100.3	0.1	0.6	2.0	1.1	NA		NA		NA		NA	
USRN12213	FL:FT. LAUDERDALE	4 981	247.4	102.6	0.1	0.5	2.0	1.0	NA		NA		NA		NA	
USRN12544	FL:FT. LAUDERDALE	41681	76.5	99.8	0.3	0.5	2.0	0.9	NA		NA		NA		NA	
USRN12543	FL:FT. LAUDERDALE	41481	36.0	75.6	0.2	0.6	2.0	1.0	NA		NA		NA		NA	
USRN12094	FL:FT. LAUDERDALE	4 781	30.3	59.1	0.1	0.4	2.0	0.7	NA		NA		NA		NA	
USRN12239	FL:FT. LAUDERDALE	41381	274.9	94.6	0.1	0.5	2.0	1.1	NA		NA		NA		NA	
USRN13305	FL:FT. MYERS	52081	-20.5	131.2	0.0	0.0	0.6	4.5	NA		NA		NA		NA	
USRN03324	FL:FT. WALTON	121080	51.9	41.0	0.1	0.8	4.0	0.8	NA		NA		NA		NA	
USRN03325	FL:FT. WALTON	121080	93.8	40.5	0.0	0.0	4.0	0.8	NA		NA		NA		NA	
USRN10201	FL:GAINESVILLE	11431	290.5	99.1	2.4	0.7	0.6	0.3	NA		NA		NA		NA	
USRN12100	FL:HALLENDALE	4 881	-80.1	199.6	0.2	0.4	4.0	0.8	NA		NA		NA		NA	
USRN12100X	FL:HALLENDALE	4 881	37.2	111.7	0.1	0.4	4.0	1.0	NA		NA		NA		NA	
USRN11482	FL:HOLLY HILL	31981	-30.6	57.1	0.0	0.0	2.0	0.7	NA		NA		NA		NA	
USRN12097	FL:HOLLYWOOD	4 781	-54.6	259.6	0.2	0.4	2.0	0.7	NA		NA		NA		NA	
USRN12209	FL:HOLLYWOOD	4 881	31.2	161.3	0.1	0.5	1.0	0.7	NA		NA		NA		NA	

Table B.5 Natural radioactivity in public groundwater systems-Florida (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN12369	FL:HOMESTEAD	41681	34.0	95.6	1.0	0.8	7.0	1.5	NA		NA		NA		NA	
USRN12370	FL:HOMESTEAD	41681	139.5	114.2	0.8	0.7	4.0	1.0	NA		NA		NA		NA	
USRN12370X	FL:HOMESTEAD	41681	129.6	98.4	1.0	0.7	5.0	1.2	NA		NA		NA		NA	
USRN10525	FL:INDIAN HILLS	2 381	43.6	47.1	0.5	0.4	0.0	0.0	NA		NA		NA		NA	
USRN10981	FL:JACKSONVILLE	2 281	91.5	60.7	0.8	0.8	2.0	0.6	NA		NA		NA		NA	
USRN10992	FL:JACKSONVILLE	22481	29.6	48.9	0.6	0.6	0.6	0.5	NA		NA		NA		NA	
USRN10985	FL:JACKSONVILLE	22581	244.2	110.3	0.9	0.8	2.0	0.8	NA		NA		NA		NA	
USRN10986	FL:JACKSONVILLE	22581	-38.9	70.5	0.3	0.6	2.0	0.7	NA		NA		NA		NA	
USRN11000X	FL:JACKSONVILLE	22581	151.7	106.3	0.1	1.0	2.0	1.2	NA		NA		NA		NA	
USRN10980X	FL:JACKSONVILLE	22481	18.2	84.2	0.8	0.9	3.0	0.8	NA		NA		NA		NA	
USRN11032	FL:JACKSONVILLE	22481	161.3	119.1	0.4	1.0	1.4	1.3	NA		NA		NA		NA	
USRN10984	FL:JACKSONVILLE	22481	45.2	83.2	1.0	0.8	3.0	0.8	NA		NA		NA		NA	
USRN10987	FL:JACKSONVILLE	22581	214.9	111.0	0.8	0.7	3.0	0.8	NA		NA		NA		NA	
USRN10995	FL:JACKSONVILLE	22581	282.1	111.0	0.1	0.5	2.0	0.7	NA		NA		NA		NA	
USRN10996	FL:JACKSONVILLE	22481	30.0	83.0	0.2	0.5	2.4	0.8	NA		NA		NA		NA	
USRN10994	FL:JACKSONVILLE	22481	37.4	49.7	0.6	0.6	1.3	0.6	NA		NA		NA		NA	
USRN10988	FL:JACKSONVILLE	22481	40.2	49.8	0.2	0.7	1.4	0.7	NA		NA		NA		NA	
USRN10989	FL:JACKSONVILLE	22481	13.6	34.5	0.6	0.7	2.0	0.8	NA		NA		NA		NA	
USRN11425	FL:JACKSONVILLE	31781	39.7	46.6	0.2	0.3	0.6	0.6	NA		NA		NA		NA	
USRN11000	FL:JACKSONVILLE	22581	NA		0.3	1.0	4.0	1.6	NA		NA		NA		NA	
USRN10983	FL:JACKSONVILLE	22581	249.8	109.9	0.6	0.7	2.0	0.8	NA		NA		NA		NA	
USRN10991	FL:JACKSONVILLE	22481	2.9	81.5	0.0	0.0	3.0	0.9	NA		NA		NA		NA	
USRN11033	FL:JACKSONVILLE	22581	219.8	113.1	1.2	0.8	2.0	0.7	NA		NA		NA		NA	
USRN10990	FL:JACKSONVILLE	22481	NA		0.3	0.7	2.0	0.9	NA		NA		NA		NA	
USRN11034	FL:JACKSONVILLE	22581	227.2	111.9	0.0	0.0	2.0	1.0	NA		NA		NA		NA	
USRN10982	FL:JACKSONVILLE	22581	205.1	108.5	0.7	0.8	1.5	0.7	NA		NA		NA		NA	
USRN10980	FL:JACKSONVILLE	22481	NA		0.6	0.7	1.0	0.6	NA		NA		NA		NA	
USRN10990X	FL:JACKSONVILLE	22481	43.4	48.1	0.6	0.7	2.0	0.8	NA		NA		NA		NA	
USRN13030X	FL:KISSIMMEE	51181	-30.7	75.0	0.1	0.3	0.6	0.7	NA		NA		NA		NA	
USRN13031	FL:KISSIMMEE	51181	-38.8	74.3	0.3	0.3	1.0	0.7	NA		NA		NA		NA	
USRN13030	FL:KISSIMMEE	51181	-11.0	81.5	0.0	0.2	1.1	1.0	NA		NA		NA		NA	
USRN10198	FL:LAKE CITY	11481	97.4	99.7	0.5	0.3	0.8	0.6	NA		NA		NA		NA	
USRN11629	FL:LAKELAND	32581	207.4	72.4	0.5	0.4	1.0	0.5	NA		NA		NA		NA	
USRN12240	FL:LAUDERHILL	41381	21.3	102.4	0.2	0.4	0.9	0.8	NA		NA		NA		NA	
USRN12240X	FL:LAUDERHILL	41381	-7.6	88.5	0.0	0.0	1.0	0.7	NA		NA		NA		NA	
USRN11640	FL:LECANTO	32381	0.0	153.3	0.4	0.4	0.1	0.6	NA		NA		NA		NA	
USRN11640X	FL:LECANTO	32381	47.3	94.1	0.1	0.3	0.0	0.0	NA		NA		NA		NA	
USRN11631	FL:LEESBURG	32381	381.9	99.1	0.6	0.6	2.0	0.7	NA		NA		NA		NA	
USRN13304	FL:LEHIGH ACRES	52081	-9.5	153.5	0.3	0.7	1.6	1.0	NA		NA		NA		NA	
USRN10196	FL:LIVE OAK	11381	224.0	114.2	1.4	0.8	0.2	0.2	NA		NA		NA		NA	
USRN10254	FL:MAITLAND	12081	246.5	48.8	1.5	0.8	1.5	0.5	NA		NA		NA		NA	
USRN12098	FL:MARGATE	4 981	15.6	96.7	0.1	0.4	2.0	0.9	NA		NA		NA		NA	
USRN03404	FL:MARIANNA	121580	61.0	65.3	0.3	0.5	0.6	0.5	NA		NA		NA		NA	
USRN11483	FL:MIAMI	31981	164.9	60.5	0.0	0.0	2.0	1.0	NA		NA		NA		NA	
USRN13307	FL:MIAMI	52181	180.8	135.5	0.4	0.6	4.6	1.2	NA		NA		NA		NA	
USRN12546	FL:MIAMI	41581	199.8	115.9	0.8	0.8	2.0	0.8	NA		NA		NA		NA	
USRN13308	FL:MIAMI	52181	235.2	136.3	0.1	0.6	2.2	1.0	NA		NA		NA		NA	
USRN12539	FL:MIAMI	41581	240.9	116.7	0.1	0.4	1.1	0.8	NA		NA		NA		NA	
USRN12828	FL:MIAMI	43081	230.1	129.0	0.2	0.5	0.3	0.7	NA		NA		NA		NA	
USRN12373	FL:MIAMI	41681	131.2	98.5	0.2	0.7	1.0	0.9	NA		NA		NA		NA	
USRN03402	FL:MILTON	121180	117.6	77.0	0.5	0.3	0.1	0.6	NA		NA		NA		NA	
USRN12095	FL:MIRAMAR	4 881	70.6	110.9	0.1	0.2	2.0	0.6	NA		NA		NA		NA	
USRN12104	FL:MIRAMAR	4 881	82.2	112.0	0.4	0.5	1.0	0.7	NA		NA		NA		NA	

Table B.5 Natural radioactivity in public groundwater systems-Florida (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13306	FL:NAPLES	52181	535.0	144.5	0.4	0.5	1.3	0.8	NA		NA		NA		NA	
USRN11669	FL:NEW PORT RICHEY	32681	-2.6	62.2	1.0	0.7	0.3	0.4	NA		NA		NA		NA	
USRN11641	FL:NEW PORT RICHEY	32681	1839.0	73.6	2.0	0.5	2.0	1.2	NA		NA		NA		NA	
USRN11485	FL:NEW SMYRNA BEAC	31981	-22.6	57.7	0.1	0.5	2.0	0.6	NA		NA		NA		NA	
USRN03319	FL:NICEVILLE	121080	159.5	41.5	1.4	0.6	1.4	0.5	NA		NA		NA		NA	
USRN12096	FL:NO. LAUDERDALE	4 981	9.6	96.1	0.2	0.6	0.9	0.6	NA		NA		NA		NA	
USRN12827	FL:NORTH MIAMI	43081	241.5	131.6	0.1	0.7	3.5	1.1	NA		NA		NA		NA	
USRN12829	FL:NORTH MIAMI	43081	39.3	125.0	0.1	0.5	3.6	1.1	NA		NA		NA		NA	
USRN12826	FL:NORTH MIAMI	43081	54.8	125.7	1.1	0.7	4.6	1.2	NA		NA		NA		NA	
USRN10199	FL:OCALA	11681	132.4	71.8	0.4	0.6	0.3	0.4	NA		NA		NA		NA	
USRN10272	FL:OCOEE	12281	152.9	56.4	1.2	0.7	4.1	0.8	NA		NA		NA		NA	
USRN11427	FL:ORANGE PARK	31781	34.1	46.7	0.5	0.5	1.4	0.6	NA		NA		NA		NA	
USRN11426	FL:ORANGE PARK	31781	24.0	45.5	0.3	0.5	2.0	0.7	NA		NA		NA		NA	
USRN11436	FL:ORANGE PARK	31781	51.4	46.1	0.4	0.5	0.8	0.5	NA		NA		NA		NA	
USRN10270X	FL:ORLANDO	12281	106.8	55.5	1.2	0.6	0.7	0.4	NA		NA		NA		NA	
USRN10269	FL:ORLANDO	12281	44.1	56.7	0.2	0.4	0.4	0.5	NA		NA		NA		NA	
USRN10270	FL:ORLANDO	12281	NA		1.2	0.7	1.1	0.5	NA		NA		NA		NA	
USRN10273	FL:ORLANDO	12281	123.4	56.8	0.5	0.5	1.5	0.6	NA		NA		NA		NA	
USRN11480X	FL:ORMOND BEACH	31981	3.6	56.9	0.0	0.0	0.9	0.7	NA		NA		NA		NA	
USRN11480	FL:ORMOND BEACH	31981	-84.1	103.1	0.0	0.0	1.0	0.5	NA		NA		NA		NA	
USRN03321	FL:PACE	12 980	70.8	46.0	0.2	0.3	0.2	0.3	NA		NA		NA		NA	
USRN12839	FL:PALM BEACH GARD	42881	-84.0	132.7	-0.5	0.4	2.4	1.1	NA		NA		NA		NA	
USRN12838	FL:PALM BEACH GARD	42881	-123.5	132.3	-0.2	0.3	1.8	1.0	NA		NA		NA		NA	
USRN12837	FL:PALM BEACH GARD	42881	-110.8	132.9	0.2	0.5	0.8	0.9	NA		NA		NA		NA	
USRN12830X	FL:PALM SPRINGS	42981	302.7	154.6	0.3	0.5	1.0	0.7	NA		NA		NA		NA	
USRN12830	FL:PALM SPRINGS	42981	235.2	120.9	0.4	0.5	1.0	0.8	NA		NA		NA		NA	
USRN03420	FL:PANACEA	121780	NA		1.1	0.5	1.0	0.5	NA		NA		NA		NA	
USRN03420X	FL:PANACEA	121780	1307.5	110.8	0.9	0.5	1.9	0.6	NA		NA		NA		NA	
USRN12545	FL:PEMBROKE PINES	41481	51.2	76.4	0.4	0.5	2.0	1.0	NA		NA		NA		NA	
USRN03323	FL:PENSACOLA	12 980	53.7	45.6	1.1	0.4	2.0	0.6	NA		NA		NA		NA	
USRN03320X	FL:PENSACOLA	12 980	104.9	46.0	0.7	0.4	0.6	0.4	NA		NA		NA		NA	
USRN03328	FL:PENSACOLA	12 780	90.4	66.1	0.6	0.3	0.4	0.3	NA		NA		NA		NA	
USRN03320	FL:PENSACOLA	12 980	NA		0.6	0.4	0.8	0.3	NA		NA		NA		NA	
USRN12372	FL:PERRINE	41681	206.4	100.2	0.6	0.7	2.0	0.8	NA		NA		NA		NA	
USRN10197	FL:PERRY	11281	134.2	132.9	1.0	0.7	1.5	0.6	NA		NA		NA		NA	
USRN11637	FL:PLANT CITY	32781	354.9	63.9	1.0	0.7	1.0	0.4	NA		NA		NA		NA	
USRN12241	FL:PLANTATION	41381	147.8	91.1	0.1	0.4	0.4	0.8	NA		NA		NA		NA	
USRN12242	FL:PLANTATION	41381	41.5	89.6	0.3	0.5	0.6	0.8	NA		NA		NA		NA	
USRN12105	FL:POMPANO BEACH	4 981	110.7	99.3	0.2	0.5	1.0	0.8	NA		NA		NA		NA	
USRN12210	FL:POMPANO BEACH	4 981	124.7	173.1	0.1	0.5	2.0	1.3	NA		NA		NA		NA	
USRN12210X	FL:POMPANO BEACH	4 981	225.0	100.0	0.3	0.8	2.0	1.2	NA		NA		NA		NA	
USRN13034	FL:PORT MALIBAR	51181	118.8	76.6	0.6	0.7	1.7	1.2	NA		NA		NA		NA	
USRN11481	FL:PORT ORANGE	31981	-9.5	40.8	0.0	0.0	1.0	0.6	NA		NA		NA		NA	
USRN11635	FL:PORT RICHEY	32681	816.9	69.5	0.9	0.8	1.0	0.5	NA		NA		NA		NA	
USRN12840	FL:RIVIERA BEACH	42881	146.6	159.5	0.3	0.5	1.3	0.9	NA		NA		NA		NA	
USRN12840X	FL:RIVIERA BEACH	42881	81.4	137.8	0.2	0.5	1.2	0.9	NA		NA		NA		NA	
USRN10527	FL:SANFORD	2 331	54.9	47.2	0.8	0.6	0.8	0.5	NA		NA		NA		NA	
USRN13313	FL:SANIBEL ISLAND	52081	124.1	158.9	1.0	0.8	6.9	1.4	NA		NA		NA		NA	
USRN13310X	FL:SARASOTA	51981	-178.9	173.4	0.3	0.5	5.3	1.2	NA		NA		NA		NA	
USRN13310	FL:SARASOTA	51981	128.1	211.8	0.6	0.5	6.4	1.3	NA		NA		NA		NA	
USRN13315	FL:SEBRING	52181	124.2	131.6	0.4	0.3	0.2	0.5	NA		NA		NA		NA	
USRN03421	FL:SPRING CREEK	121780	319.6	100.1	1.4	0.7	0.5	0.4	NA		NA		NA		NA	
USRN11834	FL:SPRING HILL	33181	51.8	81.0	1.0	0.4	0.3	0.2	NA		NA		NA		NA	

Table B.5 Natural radioactivity in public groundwater systems-Florida (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/1)	2SIGMA ERROR	ALPHA (pCi/1)	2SIGMA ERR	BETA (pCi/1)	2SIG ERR	Ra-226 (pCi/1)	2SIGMA ERR	Ra-228 (pCi/1)	2SIGMA ERR	U-234 (pCi/1)	2SIGMA ERR	U-238 (pCi/1)	2SIGMA ERROR
USRN11081	FL:ST. AUGUSTINE	22681	322.9	99.7	0.9	0.8	2.0	0.8	NA		NA		NA		NA	
USRN13032	FL:ST. CLOUD	51181	2.7	75.5	0.6	0.6	1.9	0.9	NA		NA		NA		NA	
USRN11633	FL:ST. PETERSBURG	32481	9.5	81.1	0.6	0.6	0.6	0.5	NA		NA		NA		NA	
USRN13134	FL:STUART	51381	-152.9	93.6	0.0	0.3	1.2	0.8	NA		NA		NA		NA	
USRN12542	FL:SUNRISE	41481	46.9	136.2	0.2	0.5	2.0	1.0	NA		NA		NA		NA	
USRN12101	FL:SUNRISE	4 981	121.8	98.6	0.2	0.5	2.0	0.6	NA		NA		NA		NA	
USRN12541	FL:SUNRISE	41481	-77.6	133.2	0.1	0.5	0.8	0.9	NA		NA		NA		NA	
USRN10200X	FL:TALLAHASSEE	11381	466.8	119.0	1.0	0.7	0.8	0.4	NA		NA		NA		NA	
USRN12106	FL:TAMARAC	4 781	242.7	51.6	0.4	0.6	2.0	1.0	NA		NA		NA		NA	
USRN11639	FL:TAMPA	32781	1139.5	68.3	0.4	0.4	1.0	0.7	NA		NA		NA		NA	
USRN13312	FL:TAMPA	51881	-23.8	223.4	0.8	0.7	1.0	0.8	NA		NA		NA		NA	
USRN12277	FL:TAMPA	32581	290.1	80.3	0.7	0.7	1.0	0.6	NA		NA		NA		NA	
USRN11632	FL:TEMPLE TERRACE	32781	266.7	57.3	2.0	0.9	2.0	0.6	NA		NA		NA		NA	
USRN12832	FL:TEQUESTA	42881	-47.6	136.1	0.1	0.5	1.4	1.0	NA		NA		NA		NA	
USRN13135	FL:TITUSVILLE	51281	160.4	133.7	0.2	0.3	0.6	0.7	NA		NA		NA		NA	
USRN10523	FL:UNIVERSITY SHOR	2 381	66.4	46.3	0.6	0.5	0.6	0.6	NA		NA		NA		NA	
USRN13309	FL:VENICE	52081	34.6	163.3	1.5	1.6	3.1	1.8	NA		NA		NA		NA	
USRN13136	FL:VERO BEACH	51281	169.1	131.9	0.5	0.9	2.8	1.1	NA		NA		NA		NA	
USRN03322	FL:WARRINGTON	12 980	104.8	46.1	0.4	0.3	0.3	0.3	NA		NA		NA		NA	
USRN12833	FL:WEST PALM BEACH	42981	148.4	119.8	0.0	0.2	1.1	0.9	NA		NA		NA		NA	
USRN12834	FL:WEST PALM BEACH	42981	-22.7	118.6	0.1	0.3	1.6	0.9	NA		NA		NA		NA	
USRN10271	FL:WINTER GARDEN	12281	77.9	56.9	0.7	0.5	0.2	0.3	NA		NA		NA		NA	
USRN11670	FL:WINTER HAVEN	32581	93.7	127.0	1.0	0.5	0.6	0.4	NA		NA		NA		NA	
USRN11670X	FL:WINTER HAVEN	32581	-40.4	71.0	1.0	0.5	0.8	0.5	NA		NA		NA		NA	
USRN10255	FL:WINTER PARK	12081	73.9	47.0	1.0	0.6	0.7	0.4	NA		NA		NA		NA	
USRN11836	FL:ZEPHYRHILLS	33181	513.3	84.6	2.0	0.9	0.3	0.3	NA		NA		NA		NA	

Table B.6 Natural radioactivity in public groundwater systems-Georgia

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN23861	GA:ADEL	71282	210.3	60.9	1.3	1.2	0.6	0.9	NA		NA		NA		NA	
USRN24090	GA:ALBANY	72082	94.1	69.0	0.5	0.7	2.0	1.4	NA		NA		NA		NA	
USRN24090X	GA:ALBANY	72082	71.3	60.9	0.4	0.6	2.2	1.4	NA		NA		NA		NA	
USRN24660	GA:AMERICUS	81182	32.6	59.3	0.0	0.3	2.6	1.1	NA		NA		NA		NA	
USRN24660X	GA:AMERICUS	81182	47.2	56.6	0.2	0.4	1.0	0.8	NA		NA		NA		NA	
USRN24450	GA:ARAGON	8 382	164.7	79.4	0.9	0.6	2.2	1.1	NA		NA		NA		NA	
USRN24450X	GA:ARAGON	8 382	125.8	70.8	1.5	0.8	-0.4	16.4	NA		NA		NA		NA	
USRN24659	GA:ASHBURN	8 982	104.0	68.6	0.3	0.4	0.9	0.9	NA		NA		NA		NA	
USRN24092	GA:BAINBRIDGE	71982	85.3	72.2	1.3	0.8	0.7	0.6	NA		NA		NA		NA	
USRN25038	GA:BAXLEY	83182	239.3	74.1	5.3	1.4	1.5	0.8	2.8	0.1	NA		0.0	0.0	0.0	0.0
USRN24254	GA:BLACKSHEAR	72782	49.8	59.4	-0.2	1.4	3.0	4.3	NA		NA		NA		NA	
USRN23514	GA:BLAKELY	62982	172.9	63.5	-0.2	0.5	1.6	1.1	NA		NA		NA		NA	
USRN24662	GA:CAMILLA	81382	67.8	72.1	0.1	0.5	0.1	0.7	NA		NA		NA		NA	
USRN24629	GA:CATOOSA CO.	81182	108.6	58.4	0.6	0.5	0.8	0.8	NA		NA		NA		NA	
USRN24420X	GA:CEDARTOWN	8 382	190.4	71.5	0.2	0.4	0.9	1.1	NA		NA		NA		NA	
USRN24420	GA:CEDARTOWN	8 382	169.6	78.9	0.2	0.4	0.6	0.8	NA		NA		NA		NA	
USRN24449	GA:CEDARTOWN	8 382	185.7	74.1	0.8	0.6	-0.1	0.5	NA		NA		NA		NA	
USRN24630	GA:CHICKAMAUGA	81082	109.4	62.5	0.3	0.4	1.0	0.8	NA		NA		NA		NA	
USRN24630X	GA:CHICKAMAUGA	81082	112.4	57.8	1.0	0.6	0.4	0.6	NA		NA		NA		NA	
USRN22454	GA:CLAXTON	5 582	35.4	96.7	0.3	0.5	2.6	1.1	NA		NA		NA		NA	
USRN24847	GA:CLOUDLAND	82382	476.8	64.3	0.3	0.5	0.9	0.8	NA		NA		NA		NA	
USRN24091	GA:CORDELE	71582	64.4	80.8	-0.1	0.7	1.2	1.1	NA		NA		NA		NA	
USRN23511	GA:CUTHBERT	62982	46.8	62.7	0.3	0.5	0.6	1.1	NA		NA		NA		NA	
USRN23513	GA:DAWSON	62882	55.6	57.3	-0.1	0.4	1.6	0.9	NA		NA		NA		NA	
USRN24975	GA:DEMOREST	83082	661.2	56.0	0.9	0.5	2.3	0.9	NA		NA		NA		NA	
USRN24976	GA:DEMOREST	83082	2694.0	81.0	1.9	0.6	2.4	0.9	NA		NA		NA		NA	
USRN24974	GA:DEMOREST	83082	3929.5	78.6	2.5	0.7	1.2	0.6	NA		NA		NA		NA	
USRN23512	GA:DONALDSONVILLE	63082	57.5	58.3	0.8	0.6	0.7	0.7	NA		NA		NA		NA	
USRN24106	GA:DOUGLAS	72282	37.1	85.1	5.3	1.6	3.3	1.0	2.1	0.0	NA		0.0	0.0	0.0	0.0
USRN23408	GA:EASTMAN	62382	54.9	60.0	0.2	0.5	1.0	0.8	NA		NA		NA		NA	
USRN24308	GA:FITZGERALD	72682	53.9	60.6	2.1	1.4	2.4	2.8	NA		NA		NA		NA	
USRN24566	GA:GARDEN CITY	8 582	NA		0.0	0.0	1.5	1.0	NA		NA		NA		NA	
USRN23201	GA:GLENNVILLE	61082	428.4	90.0	2.3	0.8	2.4	0.8	0.9	0.0	NA		0.0	0.0	0.0	0.0
USRN25047	GA:GROVETOWN	83182	698.3	69.8	0.3	0.3	2.1	0.9	NA		NA		NA		NA	
USRN24991	GA:HAZELHURST	83082	370.5	61.1	14.1	1.9	6.0	1.0	4.8	0.0	0.4	1.0	0.0	0.0	0.0	0.0
USRN22469	GA:HINESVILLE	5 682	45.1	81.0	-0.3	0.5	1.7	0.9	NA		NA		NA		NA	
USRN22584	GA:HOMERVILLE	51182	23.1	55.3	4.1	1.3	2.5	1.0	1.7	0.1	NA		0.0	0.0	0.0	0.0
USRN22201	GA:JESUP	42282	52.8	80.8	0.3	0.6	1.9	1.2	NA		NA		NA		NA	
USRN24959	GA:MCRAE	82682	532.0	100.1	8.4	1.7	4.9	1.3	3.5	0.1	-0.5	0.7	0.1	0.0	0.1	0.0
USRN23277	GA:METTER	61682	713.9	106.7	2.5	0.8	2.4	0.8	2.9	0.1	-0.1	1.7	0.1	0.0	0.1	0.0
USRN25232	GA:MILLEN	51282	107.4	104.5	NA		NA		NA		NA		NA		NA	
USRN24663	GA:MOULTRIE	81082	8.2	54.6	1.5	1.0	2.3	1.5	NA		NA		NA		NA	
USRN24451	GA:MULCO SPRINGS	8 382	135.8	70.5	3.9	0.9	-1.4	2.9	0.1	0.0	NA		0.3	0.1	0.1	0.0
USRN24658	GA:NASHVILLE	81282	32.9	84.1	2.6	1.4	1.7	1.2	NA		NA		NA		NA	
USRN24661	GA:OCILLA	8 982	24.4	67.5	0.6	0.4	0.7	0.7	NA		NA		NA		NA	
USRN24306	GA:PELHAM	72982	183.2	92.9	0.9	0.7	1.0	0.7	NA		NA		NA		NA	
USRN23631	GA:PEMBROKE	7 682	27.2	69.1	0.1	0.5	1.4	0.9	NA		NA		NA		NA	
USRN24657	GA:QUITMAN	81282	185.2	88.7	0.6	0.6	0.1	0.6	NA		NA		NA		NA	
USRN23202	GA:REIDSVILLE	61082	257.0	88.5	3.6	1.0	1.6	0.6	1.4	0.0	NA		0.0	0.0	0.0	0.0
USRN25046	GA:ROBINS AIR FORC	82782	31.4	76.7	1.1	0.5	1.4	0.9	NA		NA		NA		NA	
USRN25230X	GA:SOPERTON	8 582	257.5	107.6	NA		NA		NA		NA		NA		NA	
USRN23784	GA:ST. MARY'S	7 882	86.6	115.1	-0.3	1.1	1.7	2.2	NA		NA		NA		NA	
USRN23278	GA:STATESBORO	61682	232.0	102.6	0.6	0.6	0.9	0.7	NA		NA		NA		NA	

Table B.6 Natural radioactivity in public groundwater systems-Georgia (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Rn-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN25234	GA:SWAINSBORO	42182	24.7	56.3	NA		NA		NA		NA		NA		NA	
USRN24992	GA:SYLVANIA	83082	46.5	57.2	0.6	0.7	0.6	0.8	NA		NA		NA		NA	
USRN24309	GA:SYLVESTER	72182	139.6	63.5	3.5	2.4	8.5	5.4	2.5	0.0	NA		0.6	0.1	0.9	0.1
USRN24307	GA:TIFTON	72682	26.6	62.7	3.4	0.9	1.3	0.6	2.3	0.0	NA		0.0	0.0	0.0	0.0
USRN24848	GA:TRION	82382	738.8	66.5	0.7	0.8	1.4	1.4	NA		NA		NA		NA	
USRN23862	GA:VALDOSTA	71382	354.0	63.7	1.6	0.8	1.1	0.6	0.7	0.0	NA		0.1	0.0	0.1	0.0
USRN22745	GA:WARNER ROBINS	52182	30.1	71.7	0.7	0.4	1.4	0.7	NA		NA		NA		NA	
USRN22746	GA:WARNER ROBINS	52182	104.6	69.8	0.8	0.4	0.8	0.6	NA		NA		NA		NA	
USRN22748	GA:WARNER ROBINS	52182	129.8	72.8	2.1	0.5	3.5	0.9	NA		NA		NA		NA	
USRN22747	GA:WARNER ROBINS	52182	265.6	75.6	0.8	0.3	0.3	0.3	NA		NA		NA		NA	
USRN22199	GA:WAYCROSS	42182	103.1	99.5	2.3	1.1	1.5	1.1	NA		NA		NA		NA	
USRN22200X	GA:WAYCROSS	42182	80.4	99.2	3.6	1.2	2.8	1.0	NA		NA		0.0	0.0	0.0	0.0
USRN22200	GA:WAYCROSS	42182	41.3	102.1	5.5	1.5	3.3	1.0	2.5	0.1	0.8	1.6	0.0	0.0	0.0	0.0
USRN23630X	GA:WILMINGTON ISLA	7 782	40.7	59.3	-0.1	0.4	2.0	1.0	NA		NA		NA		NA	
USRN23630	GA:WILMINGTON ISLA	7 782	38.6	60.6	0.1	0.5	2.1	0.9	NA		NA		NA		NA	
USRN25233	GA:WRENS	5 682	332.9	88.2	NA		NA		NA		NA		NA		NA	

Table B.7 Natural radioactivity in public groundwater systems-Idaho

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14007	ID:ABERDEEN	61981	169.2	79.4	1.3	0.9	6.0	1.3	NA		NA		NA		NA	
USRN10725	ID:ABERDEEN	11381	394.0	81.9	NA		NA		NA		NA		NA		NA	
USRN12597	ID:AMERICAN FALLS	42481	348.3	86.9	2.0	3.0	10.6	4.7	NA		NA		NA		NA	
USRN10723	ID:AMERICAN FALLS	11381	715.5	82.2	NA		NA		NA		NA		NA		NA	
USRN14010	ID:AMMON	61881	403.7	117.1	1.4	1.0	4.2	1.2	NA		NA		NA		NA	
USRN10728	ID:AMMON	11581	221.9	65.4	NA		NA		NA		NA		NA		NA	
USRN14010X	ID:AMMON	61881	415.0	103.8	2.0	1.0	4.0	1.2	NA		NA		NA		NA	
USRN14015	ID:ARCO	61681	1164.0	93.1	1.9	0.8	1.4	0.7	NA		NA		NA		NA	
USRN14009	ID:ASHTON	61781	380.2	68.4	1.1	0.8	2.9	1.2	NA		NA		NA		NA	
USRN10726	ID:BLACKFOOT	11481	1182.0	82.8	NA		NA		NA		NA		NA		NA	
USRN14014	ID:BLACKFOOT	61981	146.7	81.1	1.5	0.9	0.4	0.6	NA		NA		NA		NA	
USRN13490X	ID:BOISE	52881	237.5	90.0	-0.1	0.4	1.8	1.0	NA		NA		NA		NA	
USRN10411	ID:BOISE	13081	349.9	53.6	18.0	2.5	1.3	0.3	0.2	0.0	NA		16.0	1.4	9.1	0.8
USRN13490	ID:BOISE	52881	303.7	100.8	0.0	0.0	1.4	0.9	NA		NA		NA		NA	
USRN10587	ID:BOISE	12881	309.5	65.0	1.5	0.7	0.8	0.4	NA		NA		NA		NA	
USRN13487	ID:BOISE	52981	165.9	75.9	17.1	2.4	5.1	0.9	0.1	0.0	NA		12.7	1.3	6.4	0.7
USRN13489	ID:BOISE PENITENTI	52881	897.6	98.7	2.5	0.9	2.5	0.9	NA		NA		NA		NA	
USRN15998	ID:BUHL	9 981	1144.0	74.3	4.3	1.3	7.0	1.3	0.1	0.0	NA		3.0	0.3	1.5	0.2
USRN10831	ID:BURLEY	11681	571.3	62.8	NA		NA		NA		NA		NA		NA	
USRN16125	ID:BURLEY	9 981	81.4	147.2	3.9	1.2	5.9	1.2	0.1	0.0	NA		1.3	0.2	0.6	0.1
USRN14073	ID:CALDWELL	6 481	247.7	117.9	0.5	0.5	1.0	0.9	NA		NA		NA		NA	
USRN12600	ID:CHUBBUCK	42481	30.6	98.9	0.9	0.8	5.7	1.4	NA		NA		NA		NA	
USRN10724	ID:CHUBBUCK	11381	589.9	82.6	NA		NA		NA		NA		NA		NA	
USRN12600X	ID:CHUBBUCK	42481	18.5	107.7	0.5	0.9	8.3	1.7	NA		NA		NA		NA	
USRN14965	ID:COTTONWOOD	71481	136.9	120.1	0.4	0.4	1.2	0.9	NA		NA		NA		NA	
USRN13894	ID:COUNCIL	61081	696.4	69.6	0.0	0.4	2.9	1.1	NA		NA		NA		NA	
USRN14961	ID:DALTON GARDENS	71681	364.6	93.7	1.5	0.8	3.8	1.1	NA		NA		NA		NA	
USRN13809	ID:EMMETT	61181	6.8	92.8	0.3	0.4	1.3	0.9	NA		NA		NA		NA	
USRN16126	ID:FILER	9 981	87.9	140.7	13.0	3.7	-1.1	1.7	0.1	0.0	NA		6.0	0.7	3.4	0.4
USRN13808	ID:FRUITLAND	61181	805.3	104.7	10.0	1.9	3.8	0.9	0.1	0.0	NA		5.4	0.6	4.1	0.4
USRN13488	ID:GARDEN CITY	52881	304.7	91.4	0.9	0.5	1.6	0.8	NA		NA		NA		NA	
USRN10827	ID:GLENNS FERRY	12281	16.2	65.3	NA		NA		NA		NA		NA		NA	
USRN15997	ID:GLENNS FERRY	9 881	215.5	62.4	2.6	1.2	5.6	1.3	NA		NA		NA		NA	
USRN16128	ID:GOODING	9 881	84.6	58.6	1.7	1.0	4.8	1.2	NA		NA		NA		NA	
USRN12596	ID:GRACE	42381	41.7	97.2	0.7	2.9	3.6	4.9	NA		NA		NA		NA	
USRN14968	ID:GRANGEVILLE	71481	403.5	124.6	0.4	0.5	1.6	0.9	NA		NA		NA		NA	
USRN14378	ID:HAILEY	62881	1294.5	193.5	2.6	0.9	1.4	0.8	NA		NA		NA		NA	
USRN13623	ID:HOMEDALE	6 481	301.0	116.2	1.0	1.2	13.3	2.5	NA		NA		NA		NA	
USRN10731	ID:IDAHO FALLS	11581	158.1	69.0	NA		NA		NA		NA		NA		NA	
USRN14012	ID:IDAHO FALLS	61881	207.6	95.5	1.0	0.8	3.8	1.2	NA		NA		NA		NA	
USRN14008	ID:IDAHO FALLS	61881	245.5	98.3	0.7	0.8	3.1	1.2	NA		NA		NA		NA	
USRN14006	ID:IONA	61781	37.2	62.8	0.5	0.7	3.1	1.1	NA		NA		NA		NA	
USRN16106	ID:JEROME	9 881	30.6	58.0	2.6	1.0	3.7	1.0	NA		NA		NA		NA	
USRN10826	ID:JEROME	12281	-99.2	64.5	NA		NA		NA		NA		NA		NA	
USRN16107	ID:KIMBERLY	9 981	1148.0	160.8	15.2	4.0	4.7	2.3	0.2	0.0	NA		9.7	1.1	4.8	0.6
USRN10729	ID:KIMBERLY	11681	501.7	59.9	NA		NA		NA		NA		NA		NA	
USRN12605	ID:LAVA HOT SPRING	42381	212.6	101.3	1.0	0.7	1.0	0.7	NA		NA		NA		NA	
USRN12603	ID:MALAD CITY	42381	392.6	125.6	0.6	0.4	4.6	1.1	NA		NA		NA		NA	
USRN13624	ID:MERIDIAN	6 481	280.0	118.2	5.2	1.4	2.6	0.9	0.2	0.0	NA		4.7	0.5	2.1	0.3
USRN12601	ID:MONTPELIER	42381	305.7	128.4	0.3	0.8	1.1	0.9	NA		NA		NA		NA	
USRN14960X	ID:MOSCOW	71481	4.4	122.7	0.4	0.5	4.2	1.2	NA		NA		NA		NA	
USRN15354	ID:MOSCOW	72981	-54.0	335.9	0.2	0.4	2.6	1.0	NA		NA		NA		NA	
USRN14960	ID:MOSCOW	71481	6.1	9.3	0.4	0.5	3.3	1.2	NA		NA		NA		NA	

Table B.7 Natural radioactivity in public groundwater systems-Idaho (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN10828	ID:MOUNTAIN HOME	12281	-41.7	64.3	NA		NA		NA		NA		NA		NA	
USRN16053	ID:MOUNTAIN HOME	91081	76.4	105.7	0.1	0.3	1.3	0.8	NA		NA		NA		NA	
USRN10829	ID:MOUNTAIN HOME B	12081	-178.2	88.2	NA		NA		NA		NA		NA		NA	
USRN16050X	ID:MOUNTAIN HOME B	91081	10.9	104.5	0.3	0.5	2.3	1.0	NA		NA		NA		NA	
USRN16050	ID:MOUNTAIN HOME B	91081	39.3	110.6	0.5	0.6	2.3	1.0	NA		NA		NA		NA	
USRN13625	ID:NAMPA	6 381	189.7	67.0	7.7	1.6	1.6	0.5	0.2	0.0	NA		5.6	0.6	3.5	0.4
USRN13622	ID:NAMPA	6 381	161.9	64.8	1.0	0.7	2.8	1.0	NA		NA		NA		NA	
USRN13807	ID:NEW PLYMOUTH	61181	597.3	104.4	3.9	1.2	4.2	1.1	0.1	0.0	NA		4.8	0.5	3.5	0.4
USRN14964	ID:OLDTOWN	71581	224.6	104.0	2.2	0.9	1.8	0.8	NA		NA		NA		NA	
USRN13810	ID:PARMA	61181	288.1	109.4	-0.2	0.3	10.2	1.5	NA		NA		NA		NA	
USRN13810X	ID:PARMA	61181	236.2	95.9	0.5	0.5	8.2	1.5	NA		NA		NA		NA	
USRN10722	ID:PAUL	11681	10.4	57.2	NA		NA		NA		NA		NA		NA	
USRN16127	ID:PAUL	9 981	185.8	148.4	0.7	0.7	18.8	2.0	NA		NA		NA		NA	
USRN13859	ID:PAYETTE	61081	111.5	61.0	0.0	0.2	2.6	1.0	NA		NA		NA		NA	
USRN14834	ID:PINEHURST	71581	191.8	106.5	0.1	0.2	1.6	0.9	NA		NA		NA		NA	
USRN14962	ID:PLUMMER	71681	278.5	90.0	0.6	0.5	0.1	0.4	NA		NA		NA		NA	
USRN12598	ID:POCATELLO	42481	355.9	113.9	2.0	1.3	8.7	1.6	NA		NA		NA		NA	
USRN10727	ID:POCATELLO	11381	-67.0	88.1	NA		NA		NA		NA		NA		NA	
USRN12604	ID:POCATELLO	42481	-14.1	83.2	2.1	2.8	14.0	5.0	NA		NA		NA		NA	
USRN14963	ID:POST FALLS	71581	520.0	109.0	1.4	0.6	1.4	0.8	NA		NA		NA		NA	
USRN14833	ID:POST FALLS	71581	495.7	106.6	1.4	0.7	1.3	0.8	NA		NA		NA		NA	
USRN15253	ID:POST FALLS	72781	690.7	103.1	0.6	0.4	0.9	0.7	NA		NA		NA		NA	
USRN12602	ID:PRESTON	42381	-26.6	91.6	0.0	0.0	1.2	0.8	NA		NA		NA		NA	
USRN14967	ID:RATHDRUM	71581	34.7	103.8	0.2	0.3	1.3	0.9	NA		NA		NA		NA	
USRN14016	ID:REXBURG	61781	37.4	61.8	3.3	1.0	-1.0	0.4	0.2	0.0	NA		3.0	0.3	0.8	0.1
USRN14013	ID:RIGBY	61781	628.9	75.5	1.7	1.0	0.0	0.0	NA		NA		NA		NA	
USRN16124	ID:RUPERT	9 981	232.6	151.3	0.6	1.6	17.0	5.3	NA		NA		NA		NA	
USRN10730X	ID:RUPERT	11681	142.9	58.1	NA		NA		NA		NA		NA		NA	
USRN14011	ID:SHELLEY	61881	270.4	99.2	1.6	0.9	3.8	1.1	NA		NA		NA		NA	
USRN10732	ID:SHELLEY	11481	102.6	81.2	NA		NA		NA		NA		NA		NA	
USRN16129	ID:SHOSHONE	9 881	44.0	58.6	3.0	1.0	4.4	1.1	0.1	0.0	NA		1.9	0.2	1.1	0.2
USRN12599	ID:SODA SPRINGS	42381	255.4	99.6	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN14966	ID:SPIRIT LAKE	71581	51.6	100.7	2.3	0.9	1.6	0.8	NA		NA		NA		NA	
USRN14005	ID:ST. ANTHONY	61781	33.9	61.0	0.2	0.4	1.9	0.9	NA		NA		NA		NA	
USRN14377	ID:SUN VALLEY	7 281	850.3	218.2	1.3	0.7	0.6	0.7	NA		NA		NA		NA	
USRN16052	ID:TWIN FALLS	9 981	224.3	125.1	15.7	3.8	2.6	1.6	0.1	0.0	NA		6.4	0.6	4.0	0.4
USRN10830X	ID:WENDELL	11681	158.0	98.0	NA		NA		NA		NA		NA		NA	
USRN16051	ID:WENDELL	91081	39.5	106.9	1.6	0.8	2.8	1.0	NA		NA		NA		NA	

Table 8.8 Natural radioactivity in public groundwater systems-Illinois

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN25379	IL:ADDISON	91782	150.4	96.0	1.3	2.9	8.7	5.1	NA		NA		NA		NA	
USRN24893	IL:ARLINGTON HEIGH	82582	438.1	112.2	25.6	4.2	23.4	3.4	7.1	0.1	7.3	1.2	2.5	0.3	0.1	0.0
USRN24088	IL:AURORA	72082	265.1	76.8	16.5	4.8	22.7	5.1	4.8	0.0	7.7	1.1	1.2	0.2	0.1	0.0
USRN24553	IL:BARRINGTON	8 682	-2.0	80.5	1.0	1.4	1.2	9.2	NA		NA		NA		NA	
USRN24978	IL:BARTLETT	82682	167.1	93.8	13.8	3.2	11.7	2.6	2.9	0.1	3.2	1.0	0.3	0.1	0.1	0.0
USRN24321	IL:BATAVIA	72682	209.6	74.3	17.5	3.4	24.0	3.4	11.3	0.1	12.7	1.3	1.3	0.2	0.0	0.0
USRN23858	IL:BEARDSTOWN	71482	138.8	56.9	1.6	1.4	2.4	2.0	0.3	0.0	NA		0.0	0.0	0.0	0.0
USRN24850X	IL:BELLWOOD	82482	112.6	56.5	12.8	4.9	11.3	4.2	5.5	0.1	3.6	0.8	1.0	0.2	0.2	0.1
USRN24850	IL:BELLWOOD	82482	101.4	57.4	15.7	5.2	10.4	3.9	5.7	0.1	3.7	0.9	1.0	0.2	0.1	0.0
USRN24552	IL:BELVIDERE	8 582	160.8	101.8	3.9	3.1	12.9	22.6	1.2	0.0	NA		0.4	0.1	0.3	0.1
USRN25378	IL:BENSENVILLE	91782	92.9	96.3	37.1	5.0	53.6	4.8	9.2	0.1	7.0	1.1	1.6	0.2	0.0	0.0
USRN24084	IL:BETHALTO	72082	47.2	59.8	1.7	2.5	3.0	3.7	NA		NA		NA		NA	
USRN25377	IL:BLOOMINGDALE	91782	210.3	96.5	29.3	4.6	37.7	4.2	6.8	0.1	3.5	1.1	2.2	0.3	0.0	0.0
USRN24256	IL:BOLINGBROOK	72782	486.1	147.3	3.2	2.8	-0.3	3.1	0.7	0.0	NA		0.7	0.1	0.5	0.1
USRN24368	IL:BOLINGBROOK	72782	373.7	67.1	0.8	2.1	2.3	4.4	NA		NA		NA		NA	
USRN24950	IL:BUFFALO GROVE	82782	65.4	113.9	18.6	3.9	30.7	4.1	4.7	0.0	4.2	1.0	2.4	0.3	0.1	0.0
USRN24950X	IL:BUFFALO GROVE	82782	45.9	68.3	22.2	4.2	39.7	5.5	4.7	0.1	2.8	0.8	2.2	0.3	0.1	0.0
USRN25115	IL:CAROL STREAM	9 782	241.7	72.4	3.9	1.8	8.0	2.4	1.2	0.0	NA		0.8	0.1	0.0	0.0
USRN24367	IL:CARPENTERSVILLE	8 282	7.9	40.3	1.3	2.2	1.0	3.9	NA		NA		NA		NA	
USRN25041	IL:CHICAGO HEIGHTS	9 182	338.6	62.2	24.2	8.2	20.8	7.2	8.4	0.1	8.6	1.1	2.7	0.4	0.3	0.1
USRN23306	IL:CHILLICOTHE	61782	315.3	86.0	1.3	1.3	2.9	2.0	NA		NA		NA		NA	
USRN24564	IL:CLARENDON HILLS	8 482	148.7	124.9	6.1	2.0	13.3	3.0	3.8	0.1	2.5	0.9	1.6	0.2	0.1	0.0
USRN24602	IL:CLINTON	81082	45.9	58.0	0.6	2.0	2.5	4.0	NA		NA		NA		NA	
USRN24089	IL:COLLINSVILLE	72082	55.8	115.1	0.3	1.4	2.2	2.0	NA		NA		NA		NA	
USRN24795	IL:COUNTRY CLUB HI	81882	296.0	104.5	1.2	2.3	9.4	4.5	NA		NA		NA		NA	
USRN23593	IL:CREST HILL	7 282	268.6	94.9	-0.6	1.7	8.3	5.4	NA		NA		NA		NA	
USRN24796	IL:CREVE-COURE	81882	550.8	104.7	1.2	2.4	11.6	5.2	NA		NA		NA		NA	
USRN24348	IL:CRYSTAL LAKE	72982	97.4	101.6	0.1	0.8	2.0	1.6	NA		NA		NA		NA	
USRN24258	IL:DARIEN	72782	324.9	142.3	4.1	3.0	4.0	3.3	0.3	0.0	NA		0.5	0.1	0.3	0.1
USRN24549	IL:DEKALB	8 582	127.4	98.8	4.2	1.7	9.9	2.6	1.6	0.0	NA		0.5	0.1	0.0	0.0
USRN24980X	IL:DES PLAINES	82682	91.1	85.6	5.4	2.6	19.8	3.4	3.1	0.1	4.4	1.1	2.5	2.4	2.3	2.3
USRN24979	IL:DES PLAINES	82682	81.1	85.9	8.0	4.2	24.5	5.8	1.3	0.0	3.1	1.0	0.0	0.0	0.0	0.0
USRN24980	IL:DES PLAINES	82682	211.1	121.3	4.2	2.2	18.8	3.1	3.7	0.1	4.2	1.1	2.0	0.2	1.8	0.0
USRN24445	IL:DIXON	8 382	144.8	73.1	5.3	2.1	4.1	1.9	3.3	0.1	3.3	0.9	NA		NA	
USRN24255	IL:DOWNERS GROVE	72782	647.2	145.0	1.9	3.8	5.7	3.9	NA		NA		NA		NA	
USRN25040	IL:E. CHICAGO HEIG	9 182	294.0	64.1	3.5	3.0	4.1	4.1	1.4	0.0	0.7	0.6	0.0	0.0	0.0	0.0
USRN25040X	IL:E. CHICAGO HEIG	9 182	256.6	61.5	6.5	3.7	7.7	4.5	1.2	0.0	0.7	0.7	0.0	0.0	0.0	0.0
USRN23989	IL:EAST ALTON	72082	30.9	61.0	0.0	0.0	1.6	1.4	NA		NA		NA		NA	
USRN24797	IL:EAST PEORIA	81882	439.9	101.0	0.3	2.2	5.9	4.7	NA		NA		NA		NA	
USRN24085	IL:EDWARDSVILLE	72082	2.9	58.3	0.3	1.0	1.5	1.9	NA		NA		NA		NA	
USRN24366	IL:ELGIN	8 282	76.1	56.8	1.8	1.0	10.1	1.7	NA		NA		NA		NA	
USRN24946	IL:ELK GROVE	82782	72.3	69.5	18.6	5.5	26.5	5.7	2.6	0.1	3.2	0.9	1.5	0.2	0.1	0.0
USRN25044	IL:ELMHURST	9 382	189.4	95.2	12.0	3.1	17.9	3.2	4.7	0.0	5.4	1.1	1.6	0.2	0.0	0.0
USRN24952	IL:FLOSSMOOR	82782	218.3	78.6	2.7	3.3	14.8	6.2	NA		0.8	0.6	NA		NA	
USRN24790	IL:FOX LAKE	82082	38.0	68.7	0.3	1.4	1.4	2.1	NA		NA		NA		NA	
USRN24790X	IL:FOX LAKE	82082	18.1	64.4	0.3	1.5	0.6	2.1	NA		NA		NA		NA	
USRN24447	IL:FREEPORT	8 482	59.2	58.2	15.6	4.0	14.1	4.3	2.4	0.0	NA		2.6	0.3	0.4	0.1
USRN24888	IL:GALESBURG	82582	183.8	63.1	1.0	0.9	6.0	2.5	NA		NA		NA		NA	
USRN24849	IL:GENESEO	82382	237.7	59.4	0.0	0.0	1.6	4.3	NA		NA		NA		NA	
USRN24319	IL:GENEVA	72682	68.7	69.7	16.7	3.1	17.5	2.6	5.4	0.1	6.8	1.0	1.3	0.2	0.0	0.0
USRN25406	IL:GLEN ELLYN	92082	111.8	55.9	1.1	2.7	8.9	5.8	NA		NA		NA		NA	
USRN24320X	IL:GLEN ELLYN	73082	261.9	86.1	1.1	2.6	5.7	4.6	NA		NA		NA		NA	
USRN24320	IL:GLEN ELLYN	73082	275.0	107.2	2.7	2.6	5.4	4.3	NA		NA		NA		NA	

Table B.8 Natural radioactivity in public groundwater systems-Illinois (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN25117	IL:GLENDALE HEIGHT	9 782	83.0	69.1	2.7	0.8	1.8	5.2	NA		NA		NA		NA	
USRN24890X	IL:GLENVIEW	82582	58.6	111.0	7.0	3.5	28.1	5.3	5.5	0.1	5.9	1.2	0.9	0.2	0.1	0.0
USRN24890	IL:GLENVIEW	82582	155.2	120.0	10.3	3.8	30.5	6.6	4.8	0.0	4.9	1.0	0.8	0.1	0.0	0.0
USRN25042	IL:GLENWOOD	83182	352.2	73.9	19.5	9.0	15.4	7.8	6.8	0.1	5.8	1.0	2.8	0.4	0.2	0.1
USRN24555	IL:GRAYSLAKE	8 782	95.8	70.6	7.4	2.4	9.7	13.1	2.9	0.1	NA		1.0	0.1	0.1	0.0
USRN24576	IL:GURNEE	8 982	98.0	59.3	8.8	2.4	12.0	2.8	3.0	0.1	0.9	0.8	2.1	0.2	0.1	0.0
USRN24981	IL:HANOVER PARK	82682	196.8	92.1	42.9	5.0	37.8	4.0	9.9	0.1	6.1	1.3	0.4	0.1	0.0	0.0
USRN24347	IL:HARVARD	72682	21.9	62.7	-0.9	1.2	1.9	2.4	NA		NA		NA		NA	
USRN24728	IL:HINSDALE	81682	34.1	56.0	0.6	3.2	4.2	4.6	NA		NA		NA		NA	
USRN24948	IL:HOFFMAN ESTATES	82782	278.6	75.1	12.3	3.0	11.1	2.7	2.3	0.0	NA		0.1	0.0	0.0	0.0
USRN25039	IL:HOMEWOOD	9 182	86.7	57.6	0.5	5.4	13.4	8.0	NA		NA		NA		NA	
USRN24207	IL:HOOPESTON	72782	57.6	57.1	2.0	1.5	2.4	2.1	NA		NA		NA		NA	
USRN25116	IL:ITASCA	9 782	92.7	68.6	3.8	2.9	2.6	3.4	0.5	0.0	NA		0.1	0.0	0.1	0.0
USRN23857	IL:JERSEYVILLE	71482	70.1	55.7	0.5	0.9	2.1	1.5	NA		NA		NA		NA	
USRN23517	IL:JOLIET	63082	129.8	57.1	8.9	3.8	7.8	3.6	3.7	0.1	2.8	0.7	1.8	0.2	0.3	0.1
USRN24565	IL:JONESBORO	8 582	66.2	97.5	0.2	0.6	2.5	1.5	NA		NA		NA		NA	
USRN24846	IL:KEWANEE	82382	340.2	74.1	18.4	9.6	35.0	12.0	4.9	0.0	3.1	0.8	1.1	0.2	0.2	0.1
USRN24666	IL:LA GRANGE	81282	54.5	78.5	17.7	5.3	2.0	2.0	0.5	0.0	NA		1.1	0.2	0.2	0.1
USRN24664	IL:LA GRANGE HIGHL	81282	55.8	77.7	0.6	4.6	5.7	8.5	NA		NA		NA		NA	
USRN24958	IL:LA SALLE	82682	599.0	98.8	1.1	2.8	1.8	3.7	NA		NA		NA		NA	
USRN24558	IL:LAKE COUNTRY	8 782	995.0	84.4	12.1	2.9	18.8	16.4	7.0	0.1	4.8	0.9	1.8	0.2	0.1	0.0
USRN24349	IL:LAKE IN THE HIL	72982	185.0	101.5	1.6	1.5	4.4	2.5	NA		NA		NA		NA	
USRN24577	IL:LAKE ZURICH	8 982	66.8	56.6	11.1	2.6	19.8	3.3	4.5	0.0	6.5	1.0	1.3	0.2	0.0	0.0
USRN24595	IL:LAWRENCEVILLE	81082	7.4	58.9	1.6	1.2	2.0	1.7	NA		NA		NA		NA	
USRN23591	IL:LEMONT	7 282	230.8	92.1	23.3	4.1	19.9	3.1	12.6	0.1	5.7	0.9	1.7	0.3	0.1	0.0
USRN24598	IL:LIBERTYVILLE	8 982	62.8	69.9	1.3	2.7	0.9	3.5	NA		NA		NA		NA	
USRN23856	IL:LINCOLN	71482	118.0	54.9	2.2	1.7	2.5	1.7	0.1	0.0	NA		0.6	0.1	0.5	0.1
USRN24557	IL:LISLE	8 582	160.6	121.9	4.3	3.6	3.3	17.0	1.0	0.0	NA		0.3	0.1	0.2	0.1
USRN24554	IL:LISLE	8 482	543.5	130.2	0.3	3.0	6.0	31.4	NA		NA		NA		NA	
USRN23594	IL:LOCKPORT	7 282	219.3	93.5	25.1	4.2	19.3	3.0	10.5	0.1	6.3	1.0	2.6	0.4	0.1	0.0
USRN25384	IL:LOMBARD	92082	90.8	56.8	31.9	4.7	24.4	3.3	5.1	0.1	6.0	1.1	1.9	0.3	0.0	0.0
USRN24596	IL:LOVES PARK	8 982	96.4	134.5	0.2	1.5	2.8	2.4	NA		NA		NA		NA	
USRN24794	IL:MATTESON	81882	360.1	104.5	2.2	3.3	9.1	4.7	NA		NA		NA		NA	
USRN24346	IL:MCHENRY	72982	156.4	100.2	-1.0	1.8	2.1	4.9	NA		NA		NA		NA	
USRN24954	IL:MENDOTA	82682	55.0	80.2	14.3	3.2	13.5	2.7	4.8	0.0	3.6	0.9	0.4	0.1	0.0	0.0
USRN24546	IL:METROPOLIS	8 582	549.7	109.5	3.9	1.4	4.4	1.5	2.2	0.0	NA		0.3	0.1	0.1	0.0
USRN24886	IL:MILAN	82582	101.0	62.5	-0.9	4.2	22.2	8.0	NA		0.0	0.5	NA		NA	
USRN24600	IL:MOMENCE	8 982	589.3	81.9	6.2	2.4	0.2	0.3	0.3	0.0	NA		2.7	0.4	1.2	0.2
USRN24600X	IL:MOMENCE	8 982	598.1	68.7	6.3	2.4	5.5	2.7	0.3	0.0	NA		2.3	0.3	1.1	0.1
USRN24887	IL:MONMOTH	82582	85.8	62.2	21.6	7.1	33.2	8.3	7.1	0.1	1.7	0.8	2.0	0.3	0.3	0.1
USRN24087	IL:MONTGOMERY	72082	98.7	120.5	12.0	2.8	18.2	3.3	5.0	0.1	7.1	0.9	1.5	0.2	0.1	0.0
USRN23518	IL:MORRIS	63082	22.9	56.6	12.5	3.0	12.5	2.6	7.6	0.1	8.1	1.0	0.5	0.1	0.1	0.0
USRN23353	IL:MORTON	62182	73.9	57.3	-0.7	1.5	2.8	2.3	NA		NA		NA		NA	
USRN24891	IL:MOUNT PROSPECT	82582	107.8	104.7	12.7	2.9	13.6	2.7	4.4	0.0	4.8	1.0	2.6	0.3	0.2	0.0
USRN24977	IL:MT. PROSPECT	82682	149.4	88.4	11.4	3.8	22.0	5.6	3.3	0.1	4.5	0.9	0.5	0.1	0.0	0.0
USRN24603	IL:MUNDELEIN	8 982	188.7	73.0	12.9	3.2	12.0	2.7	3.2	0.1	3.8	0.9	1.8	0.2	0.1	0.0
USRN24322	IL:N. AURORA	72682	69.2	71.9	9.2	2.6	15.3	2.9	3.3	0.1	4.3	1.0	1.2	0.2	0.1	0.0
USRN24318	IL:NAPERVILLE	73082	337.5	87.7	1.8	2.7	2.9	3.8	NA		NA		NA		NA	
USRN23590X	IL:NEW LENOX	7 282	225.0	105.8	0.0	0.0	-1.0	3.5	NA		NA		NA		NA	
USRN23590	IL:NEW LENOX	7 282	69.6	107.1	0.3	2.1	-0.5	4.4	NA		NA		NA		NA	
USRN24601	IL:NORMAL	81082	25.4	56.5	0.1	0.7	3.2	1.6	NA		NA		NA		NA	
USRN24632	IL:NORTH PARK	81082	171.6	60.1	-0.7	1.0	2.1	2.3	NA		NA		NA		NA	
USRN24993	IL:NORTH TAZWELL	83082	10.2	54.2	0.0	0.0	1.5	2.2	NA		NA		NA		NA	

Table B.8 Natural radioactivity in public groundwater systems-Illinois (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN25045	IL:OAK BROOK	9 382	138.8	100.4	18.0	4.0	26.5	3.7	6.2	0.1	5.7	1.2	2.0	0.3	0.0	0.0
USRN24726	IL:ORLAND PARK	81682	207.4	57.4	2.7	2.2	2.5	3.2	NA		NA		NA		NA	
USRN24956	IL:OTTOWA	82782	108.0	69.8	13.1	3.7	35.5	6.3	4.2	0.1	4.8	1.1	0.1	0.0	0.0	0.0
USRN24894	IL:PALATINE	82582	105.6	106.9	15.5	3.3	27.7	4.1	6.5	0.1	6.4	1.2	2.0	0.3	0.1	0.0
USRN24895	IL:PALATINE	82582	366.3	111.7	12.1	2.8	16.3	3.0	4.2	0.0	4.4	1.1	1.2	0.2	0.1	0.0
USRN24793	IL:PARK FOREST	81882	97.3	97.6	0.1	1.4	4.3	2.4	NA		NA		NA		NA	
USRN24599	IL:PARK FOREST SO.	8 982	226.1	84.1	2.7	1.8	2.5	2.1	NA		NA		NA		NA	
USRN24205	IL:PAXTON	72782	137.2	59.2	-0.3	1.1	0.9	2.4	NA		NA		NA		NA	
USRN23516	IL:PEKIN	7 182	348.0	115.2	0.8	2.2	2.0	3.7	NA		NA		NA		NA	
USRN23307	IL:PEORIA HEIGHTS	61882	302.7	70.8	2.6	1.7	3.8	2.1	0.2	0.0	NA		0.5	0.1	0.4	0.1
USRN24955	IL:PERU	82682	111.1	82.8	14.8	5.1	16.7	5.1	3.9	0.1	2.4	1.0	0.3	0.1	0.0	0.0
USRN24086	IL:PLANO	72082	381.9	129.8	1.6	1.2	2.6	1.9	NA		NA		NA		NA	
USRN24957	IL:PRINCETON	82682	16.3	81.1	0.2	0.8	1.7	1.5	NA		NA		NA		NA	
USRN24208	IL:RANTOUL	72782	40.4	57.8	0.3	0.6	1.3	1.0	NA		NA		NA		NA	
USRN24792	IL:RICHTON PARK	81882	273.4	101.1	1.0	2.5	6.9	4.6	NA		NA		NA		NA	
USRN24667	IL:RIVERSIDE	81282	226.0	84.0	1.5	3.2	25.8	6.2	NA		2.5	0.6	NA		NA	
USRN24548	IL:ROCHELLE	8 582	29.4	94.4	0.3	0.6	0.8	1.6	NA		NA		NA		NA	
USRN24448	IL:ROCK FALLS	8 382	63.5	69.1	0.0	0.0	0.3	2.0	NA		NA		NA		NA	
USRN24597	IL:ROCKFORD	8 982	81.2	69.1	3.2	2.0	1.4	1.4	0.7	0.0	NA		2.0	0.3	0.3	0.1
USRN24892	IL:ROLLING MEADOWS	82582	152.1	111.8	9.5	2.1	19.4	3.0	9.0	0.1	3.6	0.3	1.8	0.2	0.1	0.0
USRN23592	IL:ROMEOVILLE	7 282	60.5	89.9	12.7	3.0	17.3	3.1	5.3	0.1	4.4	0.9	1.6	0.2	0.1	0.0
USRN25114	IL:ROSELLE	9 782	64.5	68.0	15.0	3.0	19.1	3.1	4.7	0.0	5.8	1.9	2.3	0.3	0.1	0.0
USRN24791	IL:ROUND LAKE BEAC	82082	235.2	69.2	11.5	2.6	17.1	3.1	5.2	0.1	3.7	0.8	0.6	0.1	0.1	0.0
USRN24365	IL:S. ELGIN	8 282	178.4	57.6	0.3	2.3	0.9	3.6	NA		NA		NA		NA	
USRN24550	IL:SANDWICH	8 582	203.0	107.0	3.2	2.1	1.8	1.7	1.2	0.0	NA		0.1	0.0	0.1	0.0
USRN24550X	IL:SANDWICH	8 582	95.2	96.9	2.9	1.8	6.4	2.5	1.1	0.0	NA		0.1	0.0	0.1	0.0
USRN25102	IL:SAUK VILLAGE	83182	334.3	74.5	3.8	3.1	4.1	3.8	1.5	0.1	NA		NA		NA	
USRN24949	IL:SCHAUMBURG	82782	261.0	338.6	0.6	2.4	5.1	4.8	NA		NA		NA		NA	
USRN24885	IL:SILVIS	82382	99.3	56.5	8.4	4.1	16.7	5.1	2.9	0.1	NA		0.6	0.1	0.1	0.0
USRN24953	IL:SO. CHICAGO HEI	82782	15.5	73.4	5.5	3.1	17.7	6.3	0.8	0.0	0.7	0.7	0.0	0.0	0.0	0.0
USRN23366	IL:SPRING VALLEY	62282	181.8	59.1	5.8	2.9	16.6	5.1	4.9	0.0	4.2	2.0	1.1	0.2	0.1	0.0
USRN25235	IL:ST. CHARLES	8 682	288.4	125.2	NA		NA		NA		NA		NA		NA	
USRN24951	IL:STEGER	82782	188.9	75.9	3.7	2.7	6.4	3.9	0.6	0.0	NA		0.0	0.0	0.0	0.0
USRN24446	IL:STERLING	8 382	150.6	70.5	0.6	1.3	2.1	2.4	NA		NA		NA		NA	
USRN24947	IL:STREAMWOOD	82782	155.1	82.1	9.5	2.6	9.2	3.6	2.8	0.1	1.0	0.8	0.3	0.1	0.1	0.0
USRN24551	IL:SYCAMORE	8 582	-14.4	95.6	0.4	0.9	12.4	3.1	NA		NA		NA		NA	
USRN24083	IL:TROY	72182	25.1	62.7	3.0	2.1	1.5	1.6	0.2	0.0	NA		1.1	0.2	1.1	0.2
USRN24206	IL:URBANA	72782	39.1	57.9	0.2	0.6	2.0	0.9	NA		NA		NA		NA	
USRN25385	IL:VILLA PARK	92082	174.2	59.1	12.0	4.1	31.7	5.9	4.5	0.0	5.9	1.1	1.6	0.2	0.2	0.1
USRN25429	IL:W. CHICAGO	92182	183.2	58.8	6.0	2.5	22.0	3.5	3.4	0.1	2.5	0.9	1.9	0.2	0.1	0.0
USRN23305	IL:WASHINGTON	61782	105.4	80.6	-0.3	1.1	2.1	2.1	NA		NA		NA		NA	
USRN24889	IL:WATSEKA	82582	243.9	63.4	0.6	1.1	2.8	2.0	NA		NA		NA		NA	
USRN24556	IL:WAUCONDA	8 682	220.4	85.9	0.3	1.5	1.9	11.1	NA		NA		NA		NA	
USRN24665	IL:WESTERN SPRINGS	81282	119.2	81.5	1.3	1.0	6.0	2.3	NA		NA		NA		NA	
USRN24563	IL:WESTMONT	8 482	-88.7	121.8	9.5	3.4	13.1	4.6	5.1	0.1	2.5	0.8	1.0	0.1	0.1	0.0
USRN25407	IL:WHEATON	92082	170.1	56.1	1.0	3.1	12.8	6.3	NA		NA		NA		NA	
USRN24896	IL:WHEELING	82582	174.0	107.2	20.2	3.9	25.5	3.9	6.1	0.1	8.7	1.2	2.9	0.4	0.2	0.0
USRN25428	IL:WINFIELD	92182	40.5	55.9	0.3	2.3	3.5	4.5	NA		NA		NA		NA	
USRN24604	IL:WINTHROP HARBOR	8 982	118.7	59.9	20.6	4.6	35.3	6.0	6.4	0.1	3.7	0.7	3.2	0.4	0.4	0.1
USRN25380X	IL:WOOD DALE	91782	142.4	97.0	6.3	3.7	10.5	4.5	1.9	0.0	NA		0.5	0.1	0.1	0.0
USRN25380	IL:WOOD DALE	91782	149.8	100.6	9.1	3.8	14.7	5.0	NA		NA		0.6	0.1	0.1	0.0
USRN23988	IL:WOOD RIVER	72082	138.1	62.6	0.8	0.9	1.5	1.2	NA		NA		NA		NA	
USRN24257	IL:WOODRIDGE	72782	491.4	148.0	4.5	3.0	3.8	3.5	0.8	0.0	NA		1.1	0.2	0.9	0.1
USRN24209	IL:WOODSTOCK	72682	21.8	62.2	0.5	2.0	6.4	4.1	NA		NA		NA		NA	

Table B.9 Natural radioactivity in public groundwater systems-Indiana

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13853	IN:ALEXANDER	61581	39.2	62.5	0.8	0.8	1.9	1.1	NA		NA		NA		NA	
USRN14713	IN:ANDERSON	71681	142.5	95.7	0.4	0.8	3.4	1.2	NA		NA		NA		NA	
USRN14143	IN:ANGOLA	62481	86.0	101.3	0.1	0.7	1.8	1.0	NA		NA		NA		NA	
USRN13703	IN:ATTICA	6 481	412.6	118.4	1.2	1.1	2.2	1.8	NA		NA		NA		NA	
USRN13063	IN:AUBURN	51381	83.3	65.5	1.1	1.2	2.9	2.0	1.4	0.0	NA		0.1	0.0	0.0	0.0
USRN13700X	IN:AURORA	6 881	383.5	76.7	0.1	1.1	2.9	2.0	NA		NA		NA		NA	
USRN13700	IN:AURORA	6 881	352.4	78.9	1.1	1.2	1.8	1.7	NA		NA		NA		NA	
USRN12999	IN:BERNE	51181	17.5	60.6	-0.3	2.1	0.1	0.0	NA		NA		NA		NA	
USRN13353	IN:BICKNELL	52781	53.9	60.4	-0.4	0.7	4.6	2.1	NA		NA		NA		NA	
USRN14181	IN:BLOOMFIELD	62981	297.9	64.0	0.5	0.6	1.8	1.1	NA		NA		NA		NA	
USRN14072	IN:BOONEVILLE	62381	176.3	62.6	0.3	0.5	1.5	1.1	NA		NA		NA		NA	
USRN13933	IN:BRAZIL	61881	370.1	99.9	-0.1	0.4	0.9	1.0	NA		NA		NA		NA	
USRN13029	IN:BREMEN	51281	1.5	44.7	0.5	0.5	2.1	0.9	NA		NA		NA		NA	
USRN15731	IN:BROWNSBURG	71381	15.9	73.7	NA		NA		NA		NA		NA		NA	
USRN13221	IN:CARMEL	51981	42.7	70.8	0.3	0.6	0.6	1.1	NA		NA		NA		NA	
USRN14153	IN:CHANDLER	62381	-17.3	121.6	1.0	0.9	2.9	1.1	NA		NA		NA		NA	
USRN15586	IN:CHARLESTOWN	81381	397.7	89.5	0.1	0.5	1.6	1.0	NA		NA		NA		NA	
USRN12566	IN:CHESTERFIELD	42381	80.3	88.7	1.0	0.8	0.5	0.6	NA		NA		NA		NA	
USRN13348	IN:CHESTERTON	52681	24.5	60.0	0.9	1.0	2.8	1.8	NA		NA		NA		NA	
USRN14714	IN:CLINTON	71481	267.4	138.3	1.3	1.8	7.7	4.7	NA		NA		NA		NA	
USRN12735	IN:COLOMBIA CITY	42981	-30.4	60.9	0.2	0.7	2.4	1.1	NA		NA		NA		NA	
USRN17473	IN:COLUMBUS	111081	72.3	64.5	1.4	1.2	5.2	2.4	NA		NA		NA		NA	
USRN15904	IN:CONNERSVILLE	83181	86.5	60.2	0.3	0.6	1.7	1.0	NA		NA		NA		NA	
USRN12676	IN:COVINGTON	42981	318.2	65.2	0.2	0.7	1.9	1.2	NA		NA		NA		NA	
USRN15587	IN:CROWN POINT	81681	38.5	69.8	0.1	0.6	1.7	1.1	NA		NA		NA		NA	
USRN13852	IN:DANVILLE	61581	13.5	70.1	2.8	1.1	3.2	1.2	NA		NA		NA		NA	
USRN13000X	IN:DECATUR	51181	15.0	59.1	0.6	2.4	-0.4	6.3	NA		NA		NA		NA	
USRN13000	IN:DECATUR	51181	14.5	63.4	0.0	0.0	-3.3	4.8	NA		NA		NA		NA	
USRN13220X	IN:DELPHI	51881	65.8	83.0	0.2	0.7	1.6	1.0	NA		NA		NA		NA	
USRN13220	IN:DELPHI	51881	-18.7	92.2	0.0	0.0	2.8	1.1	NA		NA		NA		NA	
USRN12375	IN:DUNKIRK	42081	271.2	86.0	0.5	1.8	0.0	0.0	NA		NA		NA		NA	
USRN15613	IN:DYER	81081	33.4	210.9	1.5	2.2	4.0	4.2	NA		NA		NA		NA	
USRN14507	IN:EDINBURG	7 781	212.9	128.8	0.2	0.9	7.2	1.5	NA		NA		NA		NA	
USRN13444	IN:ELKHART	52781	60.6	107.4	0.5	0.7	0.9	0.8	NA		NA		NA		NA	
USRN13854	IN:ELWOOD	61581	30.0	62.2	1.1	0.8	2.4	1.1	NA		NA		NA		NA	
USRN14380X	IN:FAIRMOUNT	7 681	84.0	61.2	1.1	0.9	4.1	1.3	NA		NA		NA		NA	
USRN14380	IN:FAIRMOUNT	7 681	70.9	65.5	0.5	0.8	4.2	1.2	NA		NA		NA		NA	
USRN14148	IN:FORT BRANCH	62581	34.9	88.0	0.2	0.7	1.7	1.2	NA		NA		NA		NA	
USRN12273	IN:FRANKFORT	41581	-26.2	63.4	0.3	0.7	2.0	1.1	NA		NA		NA		NA	
USRN17726	IN:FRANKLIN	11 981	15.9	72.1	NA		NA		NA		NA		NA		NA	
USRN13064	IN:GARRETT	51381	-28.6	62.9	1.0	1.0	2.3	1.6	NA		NA		NA		NA	
USRN14379	IN:GAS CITY	7 681	49.7	59.2	0.9	1.2	4.5	4.3	NA		NA		NA		NA	
USRN13851	IN:GREENCASTLE	61581	310.9	77.3	0.8	0.8	2.4	1.2	NA		NA		NA		NA	
USRN15907	IN:GREENDALE	9 181	273.1	76.5	1.7	1.8	2.3	3.3	NA		NA		NA		NA	
USRN17474	IN:GREENFIELD	111081	29.4	61.6	1.9	1.4	2.5	1.8	NA		NA		NA		NA	
USRN17626	IN:GREENWOOD	11 981	156.0	75.7	1.4	1.3	1.6	1.7	NA		NA		NA		NA	
USRN12641	IN:HARTFORD CITY	42881	-7.2	74.4	0.5	1.7	7.0	4.6	NA		NA		NA		NA	
USRN15909	IN:JEFFERSONVILLE	9 181	222.1	73.0	1.5	1.0	2.1	1.0	NA		NA		NA		NA	
USRN15588	IN:JEFFERSONVILLE	81281	160.1	101.8	0.0	0.0	4.9	4.2	NA		NA		NA		NA	
USRN13133	IN:KENDELLVILLE	51281	1.8	74.1	0.3	0.4	1.7	0.9	NA		NA		NA		NA	
USRN12867	IN:KNOX	5 481	104.4	61.1	0.1	0.4	1.7	1.0	NA		NA		NA		NA	
USRN14509	IN:KOKOMO	7 781	359.0	125.2	0.5	0.7	3.4	1.1	NA		NA		NA		NA	
USRN12440X	IN:LA PORTE	42081	27.1	75.8	0.6	0.7	2.0	1.1	NA		NA		NA		NA	

Table B.9 Natural radioactivity in public groundwater systems-Indiana (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN12440	IN:LA PORTE	42081	47.9	84.0	0.3	0.8	2.0	0.7	NA		NA		NA		NA	
USRN12674	IN:LAFAYETTE	42881	254.3	66.7	0.1	0.3	0.5	0.8	NA		NA		NA		NA	
USRN13702	IN:LAWRENCEBURG	6 981	145.6	62.9	0.8	1.2	3.0	2.0	NA		NA		NA		NA	
USRN12114	IN:LEBANON	4 981	21.1	90.6	0.2	0.6	2.0	1.0	NA		NA		NA		NA	
USRN13065	IN:LIGONIER	51281	-59.2	73.4	0.1	1.0	0.4	1.9	NA		NA		NA		NA	
USRN14018	IN:LINTON	61881	327.0	100.4	1.7	1.1	0.7	0.7	NA		NA		NA		NA	
USRN14218	IN:LOWELL	62981	-6.6	60.4	0.5	2.3	9.9	4.9	NA		NA		NA		NA	
USRN13701	IN:MADISON	6 981	185.9	62.7	0.3	0.6	2.8	1.1	NA		NA		NA		NA	
USRN12439	IN:MARION	42181	80.3	65.4	0.4	0.5	2.0	1.1	NA		NA		NA		NA	
USRN13442	IN:MISHAWAKA	52781	-19.0	104.2	1.2	1.1	3.3	1.7	0.3	0.0	NA		0.5	0.1	0.4	0.1
USRN13158	IN:MONTICELLO	51881	18.7	59.5	0.7	0.7	1.9	1.0	NA		NA		NA		NA	
USRN15730	IN:MOORESVILLE	71381	364.6	85.7	NA		NA		NA		NA		NA		NA	
USRN15730X	IN:MOORESVILLE	71381	421.5	82.1	NA		NA		NA		NA		NA		NA	
USRN13028	IN:NAPPANNEE	51281	33.4	62.7	0.3	0.5	0.8	0.8	NA		NA		NA		NA	
USRN15312	IN:NEW CASTLE	8 581	64.3	60.2	1.7	1.7	7.1	4.1	NA		NA		NA		NA	
USRN17472	IN:NEW WHITELAND	11 981	49.3	73.6	1.2	1.3	4.7	2.2	NA		NA		NA		NA	
USRN12734	IN:NO. MANCHESTER	42981	-7.5	60.2	0.3	0.6	1.8	0.9	NA		NA		NA		NA	
USRN13443	IN:NOTRE DAME	52781	269.6	111.1	0.3	0.9	2.0	1.7	NA		NA		NA		NA	
USRN12274	IN:PERU	41581	68.7	64.5	0.8	0.5	0.4	0.6	NA		NA		NA		NA	
USRN14149	IN:PETERSBURG	62481	0.1	100.5	2.8	1.0	1.0	0.7	NA		NA		NA		NA	
USRN14182	IN:PLAINVILLE	62981	55.2	58.8	1.2	1.7	4.5	4.5	NA		NA		NA		NA	
USRN13676	IN:PLYMOUTH	6 881	123.6	42.6	1.1	1.0	3.5	1.7	NA		NA		NA		NA	
USRN12374	IN:PORTLAND	42081	61.8	83.7	0.7	1.9	0.0	0.0	NA		NA		NA		NA	
USRN14151	IN:PRINCETON	62381	63.0	119.2	0.4	0.6	1.1	1.0	NA		NA		NA		NA	
USRN13159	IN:RENSSELAER	51881	-9.6	60.1	0.4	1.4	3.0	4.8	NA		NA		NA		NA	
USRN13132	IN:RISING SUN	51181	185.0	148.9	0.3	0.7	1.6	1.0	NA		NA		NA		NA	
USRN13677	IN:ROCHESTER	6 881	35.8	42.1	0.3	0.5	1.8	0.9	NA		NA		NA		NA	
USRN15732	IN:ROCKVILLE	71481	66.1	63.6	NA		NA		NA		NA		NA		NA	
USRN15903	IN:RUSHVILLE	9 281	2.2	60.4	0.7	0.7	0.8	0.8	NA		NA		NA		NA	
USRN14490X	IN:SELLERSBURG	7 981	187.8	89.1	0.6	0.6	0.8	0.8	NA		NA		NA		NA	
USRN14490	IN:SELLERSBURG	7 981	162.9	93.6	0.7	0.6	1.7	0.9	NA		NA		NA		NA	
USRN16247	IN:SHELBYVILLE	91681	287.2	105.5	1.3	0.8	2.5	1.0	NA		NA		NA		NA	
USRN13445	IN:SOUTH BEND	52781	71.4	108.4	0.6	1.0	0.2	0.9	NA		NA		NA		NA	
USRN13932	IN:SPENCER	61581	81.2	61.4	0.2	0.8	1.4	1.0	NA		NA		NA		NA	
USRN13354	IN:SULLIVAN	52781	98.6	60.7	-0.2	1.1	4.8	2.3	NA		NA		NA		NA	
USRN14150X	IN:TELL CITY	62381	306.6	79.6	0.1	0.5	1.4	1.0	NA		NA		NA		NA	
USRN14150	IN:TELL CITY	62381	236.3	73.2	0.0	0.0	-0.9	0.4	NA		NA		NA		NA	
USRN13355	IN:TERRE HAUTE	52781	248.8	62.2	0.0	0.0	7.6	4.8	NA		NA		NA		NA	
USRN12251	IN:TIPTON	41481	30.5	73.6	0.8	0.7	2.0	0.7	NA		NA		NA		NA	
USRN14510X	IN:UNION CITY	7 881	31.4	107.9	0.5	0.9	2.2	1.0	NA		NA		NA		NA	
USRN14510	IN:UNION CITY	7 881	61.6	114.0	0.9	0.8	1.9	1.0	NA		NA		NA		NA	
USRN15495	IN:UPLAND	81181	53.8	59.5	0.0	0.0	4.3	4.5	NA		NA		NA		NA	
USRN13347	IN:VALPARASIO	52681	96.5	63.2	0.3	1.2	3.3	1.9	NA		NA		NA		NA	
USRN13441	IN:VINCENNES	52781	174.4	63.7	0.8	1.0	2.8	1.7	NA		NA		NA		NA	
USRN14508	IN:W. LAFAYETTE	7 781	133.4	128.6	0.4	0.7	2.4	1.2	NA		NA		NA		NA	
USRN12675	IN:W. LAFAYETTE	42881	238.0	65.4	0.0	0.0	3.5	1.2	NA		NA		NA		NA	
USRN12609	IN:WABASH	42781	80.9	60.8	0.6	0.8	2.0	1.1	NA		NA		NA		NA	
USRN13857	IN:WALKERTON	61581	34.2	61.5	0.2	0.6	1.3	1.1	NA		NA		NA		NA	
USRN14152	IN:WASHINGTON	62481	204.7	106.6	1.2	0.9	1.9	1.0	NA		NA		NA		NA	
USRN15962	IN:WINCHESTER	9 881	7.2	59.5	0.8	1.1	1.9	1.7	NA		NA		NA		NA	

Table B.10 Natural radioactivity in public groundwater systems-Kansas

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN30472	KS:ABILENE	11883	340.2	118.1	0.5	0.9	1.0	1.2	NA		NA		NA		NA	
USRN24313	KS:COLBY	71282	NA		7.1	2.2	4.2	1.6	0.2	0.0	NA		2.3	0.7	2.2	1.3
USRN23864	KS:COLUMBUS	71382	7.3	117.7	12.9	3.6	10.3	3.6	5.6	0.1	0.7	0.7	0.3	0.1	0.1	0.0
USRN24315	KS:DAHAR	71382	NA		4.2	1.7	2.5	1.4	0.6	0.0	NA		1.8	0.3	1.2	0.2
USRN25497	KS:DERBY	91482	NA		11.9	4.0	4.2	3.3	0.4	0.0	NA		6.0	0.7	4.7	0.5
USRN23866	KS:GALENA	71382	210.7	119.9	6.2	1.6	5.3	1.4	2.2	0.0	NA		1.6	0.2	0.2	0.0
USRN23863	KS:GIRARD	71382	67.7	64.3	14.9	4.9	9.6	3.8	5.1	0.1	0.7	0.7	0.2	0.0	0.0	0.0
USRN24317	KS:GOODLAND	71282	NA		2.3	1.3	1.9	1.3	NA		NA		NA		NA	
USRN24314	KS:HAYS	71482	NA		2.4	2.8	9.9	4.6	NA		NA		1.8	0.3	1.2	0.2
USRN30471	KS:JUNCTION CITY	11883	28.2	112.3	0.5	0.7	4.7	2.0	NA		NA		NA		NA	
USRN25496	KS:NEWTON	91582	NA		0.4	1.0	0.8	1.4	NA		NA		NA		NA	
USRN25495	KS:PARK CITY	91582	NA		2.1	1.9	2.4	2.1	NA		NA		NA		NA	
USRN23867	KS:PITTSBURG	71382	72.0	64.9	22.6	3.9	6.9	1.6	5.1	0.1	1.1	0.7	0.1	0.0	0.0	0.0
USRN23865	KS:PITTSBURG	71382	85.0	66.0	1.8	1.4	5.3	2.6	0.7	0.0	NA		0.1	0.0	0.0	0.0
USRN24316	KS:PLAINVILLE	71382	NA		11.9	3.1	9.3	2.4	0.4	0.0	NA		3.0	0.4	2.2	0.3
USRN25498	KS:WICHITA	91482	NA		1.6	1.3	2.0	1.8	NA		NA		NA		NA	

Table 8.11 Natural radioactivity in public groundwater systems-Kentucky

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14899	KY:AUGUSTA	72181	254.4	79.0	0.4	0.8	4.1	1.3	NA		NA		NA		NA	
USRN13549	KY:BARDWELL	6 281	47.5	72.8	0.9	0.7	4.7	1.3	NA		NA		NA		NA	
USRN13545	KY:BEAVER DAM	6 181	29.8	73.3	0.6	0.5	1.5	0.8	NA		NA		NA		NA	
USRN14912	KY:BEDFORD	72081	250.9	91.2	0.2	0.6	2.3	1.1	NA		NA		NA		NA	
USRN13547	KY:BENTON	6 181	26.9	72.5	0.5	0.3	0.7	0.6	NA		NA		NA		NA	
USRN13555	KY:BRANDENBURG	6 381	144.1	107.0	0.8	0.7	0.5	0.7	NA		NA		NA		NA	
USRN14911	KY:BROOKESVILLE	72181	150.0	74.4	0.1	0.7	2.3	1.1	NA		NA		NA		NA	
USRN14901	KY:BUCKNER	72081	220.5	90.4	1.0	0.7	2.3	1.1	NA		NA		NA		NA	
USRN13559	KY:CALVERT CITY	6 181	132.3	74.8	0.0	0.0	1.3	0.9	NA		NA		NA		NA	
USRN14908	KY:CAMPBELLSBURG	72081	210.2	89.3	0.5	0.7	3.7	1.2	NA		NA		NA		NA	
USRN13548	KY:CLAY	6 281	-11.5	117.0	-0.8	1.1	4.0	2.1	NA		NA		NA		NA	
USRN13553	KY:CLINTON	6 281	NA		0.0	0.0	2.3	1.1	NA		NA		NA		NA	
USRN13565	KY:CLOVERPORT	6 381	34.3	104.6	0.1	0.5	0.3	0.9	NA		NA		NA		NA	
USRN14914	KY:DOVER	72181	184.2	77.7	0.5	0.7	1.6	1.0	NA		NA		NA		NA	
USRN15526	KY:EVARTS	81181	22.6	67.4	0.7	0.6	1.8	1.0	NA		NA		NA		NA	
USRN13563	KY:FANCY FARM	6 281	77.4	73.3	0.1	0.3	0.7	0.9	NA		NA		NA		NA	
USRN13546	KY:FULTON	6 281	-14.7	71.6	0.5	0.3	1.0	0.7	NA		NA		NA		NA	
USRN14952	KY:GARRISON	72181	218.9	78.6	0.3	0.3	2.0	0.9	NA		NA		NA		NA	
USRN14905	KY:GHENT	72081	226.4	87.6	0.6	1.7	7.1	4.7	NA		NA		NA		NA	
USRN14903	KY:GOSHEN	72081	177.6	89.3	0.8	0.8	1.4	0.9	NA		NA		NA		NA	
USRN13551	KY:HAWESVILLE	6 381	35.8	105.6	1.9	1.2	5.5	2.0	NA		NA		NA		NA	
USRN13538	KY:HICKORY	6 281	140.8	75.0	0.2	0.3	1.9	0.9	NA		NA		NA		NA	
USRN13544	KY:LA CENTER	6 281	390.9	79.6	1.1	0.6	1.0	0.7	NA		NA		NA		NA	
USRN13539	KY:LEDBETTER	6 281	-9.8	117.3	0.3	0.5	1.8	1.1	NA		NA		NA		NA	
USRN13561	KY:MAYFIELD	6 281	52.0	119.5	0.1	0.2	0.5	0.9	NA		NA		NA		NA	
USRN13552	KY:MAYFIELD	6 281	9.6	51.6	0.2	0.4	1.3	0.8	NA		NA		NA		NA	
USRN13564	KY:MAYFIELD	6 281	101.0	120.1	0.3	0.3	1.3	0.8	NA		NA		NA		NA	
USRN14902	KY:MAYSVILLE	72181	250.8	78.4	0.3	0.7	1.9	1.0	NA		NA		NA		NA	
USRN14907	KY:MILTON	72081	350.4	91.0	0.9	1.6	6.3	4.5	NA		NA		NA		NA	
USRN13541	KY:MURRAY	6 181	13.1	72.5	1.5	1.6	9.6	4.3	NA		NA		NA		NA	
USRN15842	KY:NEON	82581	-23.3	69.7	0.8	2.0	7.1	4.5	NA		NA		NA		NA	
USRN13557	KY:NORTONVILLE	6 181	147.7	74.9	0.2	0.6	1.5	1.0	NA		NA		NA		NA	
USRN13560X	KY:PADUCAH	6 181	7.0	72.4	0.4	0.6	3.5	0.8	NA		NA		NA		NA	
USRN13560	KY:PADUCAH	6 181	-12.5	79.3	0.8	0.7	5.7	1.2	NA		NA		NA		NA	
USRN14913	KY:RACELAND	72281	211.6	107.9	0.3	0.6	1.8	1.0	NA		NA		NA		NA	
USRN15305	KY:ROCKHOLD	8 481	51.2	62.5	0.5	0.6	1.3	0.9	NA		NA		NA		NA	
USRN16543	KY:SALYERSVILLE	92981	43.6	73.7	0.0	0.0	0.6	4.0	NA		NA		NA		NA	
USRN13550	KY:SEBREE	6 281	312.4	140.8	2.6	3.4	5.7	4.3	NA		NA		0.1	0.0	0.0	0.0
USRN13550X	KY:SEBREE	6 281	296.5	122.9	1.9	3.2	6.3	4.4	NA		NA		0.1	0.0	0.0	0.0
USRN14953	KY:SILVER GROVE	72181	-27.5	74.3	0.6	0.7	2.5	1.1	NA		NA		NA		NA	
USRN13556	KY:SMITH'S GROVE	6 181	-7.9	72.2	0.1	0.4	2.7	1.0	NA		NA		NA		NA	
USRN14904	KY:SOUTH SHORE	72281	207.5	69.3	0.2	0.7	1.5	1.0	NA		NA		NA		NA	
USRN13540	KY:SYMSONIA	6 281	333.1	143.0	0.0	0.0	1.8	0.9	NA		NA		NA		NA	
USRN13540X	KY:SYMSONIA	6 281	340.6	124.7	0.2	0.4	1.5	1.0	NA		NA		NA		NA	
USRN14909	KY:VANCEBURG	72181	313.6	80.3	0.1	0.6	1.7	1.0	NA		NA		NA		NA	
USRN14910	KY:WARSAW	72081	317.6	99.5	0.4	0.8	3.4	1.2	NA		NA		NA		NA	
USRN14910X	KY:WARSAW	72081	281.4	89.2	0.3	0.7	2.9	1.2	NA		NA		NA		NA	
USRN13566	KY:WEST POINT	6 381	268.6	110.1	1.1	1.2	1.6	1.2	NA		NA		NA		NA	
USRN13558	KY:WHITE PLAINS	6 181	86.1	74.1	0.4	1.0	2.8	1.8	NA		NA		NA		NA	
USRN13554	KY:WHITESVILLE	6 381	-9.1	104.8	0.1	0.5	1.6	0.9	NA		NA		NA		NA	
USRN13542	KY:WICKLIFFE	6 281	31.8	72.2	0.2	0.5	1.8	0.9	NA		NA		NA		NA	
USRN13562	KY:WINGO	6 281	35.4	72.5	0.2	0.2	1.7	0.8	NA		NA		NA		NA	
USRN13543	KY:WINGO	6 281	6.9	71.8	0.4	0.3	0.9	0.7	NA		NA		NA		NA	
USRN14906	KY:WORTHINGTON	72281	204.6	109.2	0.2	0.7	2.1	1.1	NA		NA		NA		NA	
USRN14900X	KY:WURTLAND	72281	72.7	105.6	0.5	0.7	1.8	1.0	NA		NA		NA		NA	
USRN14900	KY:WURTLAND	72281	-87.6	110.1	0.3	0.6	1.0	0.9	NA		NA		NA		NA	

Table B.12 Natural radioactivity in public groundwater systems-Maine

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN16746	ME:BAR HARBOR	91081	NA		0.1	0.2	1.0	0.8	NA		NA		NA		NA	
USRN16758	ME:BINGHAM	91181	NA		0.2	0.4	1.8	0.9	NA		NA		NA		NA	
USRN16743	ME:BOOTHBAY	9 981	NA		0.4	0.4	3.6	1.0	NA		NA		NA		NA	
USRN16741	ME:BROWNVILLE JUNC	91081	NA		0.1	0.2	0.9	0.8	NA		NA		NA		NA	
USRN16751	ME:BRUNSWICK	9 981	NA		0.6	0.4	1.0	0.7	NA		NA		NA		NA	
USRN16735	ME:CLINTON	91081	NA		0.6	0.6	2.4	1.0	NA		NA		NA		NA	
USRN16750	ME:CORNISH	9 981	NA		0.1	0.3	2.1	0.9	NA		NA		NA		NA	
USRN16750X	ME:CORNISH	9 981	NA		0.4	0.3	0.3	0.5	NA		NA		NA		NA	
USRN16759	ME:FRYEBURG	9 981	NA		0.1	0.2	1.8	0.9	NA		NA		NA		NA	
USRN16749	ME:KEZAR FALLS	9 981	NA		0.1	0.5	1.2	0.9	NA		NA		NA		NA	
USRN16742	ME:KINGFIELD	91181	NA		0.1	0.2	0.9	0.8	NA		NA		NA		NA	
USRN16736	ME:LINCOLN	91081	NA		0.6	0.5	0.9	0.7	NA		NA		NA		NA	
USRN16745	ME:LISBON FALLS	9 981	NA		7.9	1.5	3.4	0.8	0.1	0.0	NA		2.8	0.3	2.8	0.3
USRN16752	ME:LUBEC	91081	NA		0.3	0.4	1.1	0.8	NA		NA		NA		NA	
USRN16737	ME:MAMMOTH	9 981	NA		15.0	2.2	11.4	1.4	1.1	0.0	NA		16.4	1.8	15.3	1.6
USRN16757	ME:MILLINOCKET	91081	NA		0.1	0.2	1.1	0.8	NA		NA		NA		NA	
USRN16755	ME:NORRIDGEWOCK	9 981	NA		0.4	0.4	3.2	1.0	NA		NA		NA		NA	
USRN16740X	ME:OLD TOWN	91081	NA		0.3	0.4	1.2	0.8	NA		NA		NA		NA	
USRN16740	ME:OLD TOWN	91081	NA		0.2	0.5	1.5	0.9	NA		NA		NA		NA	
USRN16753	ME:OXFORD	9 981	NA		0.4	0.3	2.4	0.9	NA		NA		NA		NA	
USRN16738	ME:OXFORD	9 981	NA		0.8	0.4	1.2	0.7	NA		NA		NA		NA	
USRN16747	ME:PITTSFIELD	91081	NA		0.1	0.4	3.3	1.2	NA		NA		NA		NA	
USRN16739	ME:RICHMOND	9 981	NA		0.2	0.3	1.3	0.8	NA		NA		NA		NA	
USRN16754	ME:SO. BERWICK	9 981	NA		0.2	0.4	2.4	1.0	NA		NA		NA		NA	
USRN16756	ME:SO. PARIS	9 981	NA		1.1	0.4	3.0	0.9	NA		NA		NA		NA	
USRN16744	ME:WOODLAND	91081	NA		0.1	0.3	1.1	0.8	NA		NA		NA		NA	
USRN16748	ME:YARMOUTH	9 981	NA		1.5	0.6	2.2	0.8	NA		NA		NA		NA	

Table 8.13 Natural radioactivity in public groundwater systems-Massachusetts

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN21204	MA:ACTON	22482	835.9	117.0	0.0	0.2	1.8	1.0	NA		NA		NA		NA	
USRN16343	MA:ASHLAND	92381	816.3	117.0	0.6	0.4	1.3	0.8	NA		NA		NA		NA	
USRN14715	MA:AUBURN	71581	1338.0	126.9	0.4	0.6	2.5	1.0	NA		NA		NA		NA	
USRN14996	MA:AUBURN	71581	1390.5	125.2	0.4	0.6	2.8	1.1	NA		NA		NA		NA	
USRN12657	MA:AVON	42781	1168.0	87.3	1.0	0.6	2.0	0.7	NA		NA		NA		NA	
USRN14692	MA:AYER	7 881	1064.5	117.1	0.3	0.4	2.6	1.0	NA		NA		NA		NA	
USRN21205	MA:BEDFORD	22482	42.8	105.8	-0.1	0.2	1.0	0.8	NA		NA		NA		NA	
USRN16602	MA:BELLINGHAM	93081	593.4	112.8	0.1	0.2	0.6	0.7	NA		NA		NA		NA	
USRN22398	MA:BLACKSTONE	43082	652.5	91.4	0.1	0.2	0.9	0.8	NA		NA		NA		NA	
USRN21092	MA:BREWSTER	21782	23.4	59.5	-0.1	0.2	0.6	0.8	NA		NA		NA		NA	
USRN12667	MA:BRIDGEWATER	42481	835.1	116.9	0.1	0.4	1.5	0.9	NA		NA		NA		NA	
USRN20005	MA:BUZZARDS BAY	123181	267.0	91.6	0.7	0.4	2.5	0.9	NA		NA		NA		NA	
USRN21208	MA:CHELMSFORD	22482	1180.5	129.8	0.1	0.3	2.9	1.2	NA		NA		NA		NA	
USRN21351	MA:DEDHAM	3 882	589.0	81.9	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN21091	MA:DENNIS	21782	111.4	60.6	1.0	0.4	2.8	0.9	NA		NA		NA		NA	
USRN16604	MA:DOUGLAS	93081	1417.0	127.5	-0.1	0.4	25.5	2.2	NA		NA		NA		NA	
USRN21207	MA:DRACUT	22482	804.9	116.5	0.1	0.3	2.0	1.0	NA		NA		NA		NA	
USRN12554	MA:DUDLEY	41681	5003.0	150.1	0.0	0.0	2.0	0.9	NA		NA		NA		NA	
USRN12664	MA:DUXBURY	42781	311.8	76.4	0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN12246	MA:EASTHAMPTON	4 781	175.3	185.9	0.4	0.4	0.9	0.7	0.2	0.0	NA		0.4	0.2	0.3	0.2
USRN12245	MA:EASTHAMPTON	4 781	270.1	187.0	0.2	0.4	0.4	0.7	NA		NA		NA		NA	
USRN12247	MA:EASTHAMPTON	4 781	258.4	188.5	0.7	0.4	0.5	0.6	NA		NA		NA		NA	
USRN12665	MA:EASTON	42781	1718.0	94.6	0.3	0.3	2.0	0.9	NA		NA		NA		NA	
USRN22331	MA:ESSEX	42882	114.5	100.2	0.2	0.3	1.0	0.8	NA		NA		NA		NA	
USRN12662	MA:FAIRHAVEN	42481	2175.0	130.5	2.0	0.8	4.2	1.0	NA		NA		NA		NA	
USRN22400	MA:FOXBOROUGH	43082	1130.5	95.7	-0.1	0.3	1.7	1.2	NA		NA		NA		NA	
USRN22400X	MA:FOXBOROUGH	43082	1217.5	85.3	0.1	0.3	0.9	0.8	NA		NA		NA		NA	
USRN16605	MA:FRANKLIN	93081	447.9	111.3	0.0	0.0	1.0	0.9	NA		NA		NA		NA	
USRN14135	MA:GEORGETOWN	6 281	1624.0	97.4	0.5	0.5	1.9	0.9	NA		NA		NA		NA	
USRN12661	MA:GRAFTON	41681	1359.5	101.4	0.1	0.3	4.4	1.5	NA		NA		NA		NA	
USRN14054	MA:GROVELAND	6 281	935.0	93.5	0.2	0.5	2.2	1.1	NA		NA		NA		NA	
USRN22332	MA:HAMILTON	42882	706.6	113.1	0.3	0.7	3.0	1.5	NA		NA		NA		NA	
USRN12660X	MA:HANOVER	42381	794.4	99.1	0.6	0.7	2.0	1.0	NA		NA		NA		NA	
USRN12660	MA:HANOVER	42381	674.0	114.2	0.0	0.0	2.0	1.0	NA		NA		NA		NA	
USRN21079	MA:HARWICH	21782	127.1	61.0	-0.1	0.2	0.4	0.9	NA		NA		NA		NA	
USRN16346	MA:HOLLISTON	92381	1320.0	125.2	0.3	0.3	0.3	0.6	NA		NA		NA		NA	
USRN16347	MA:HOPKINTON	92381	916.5	119.2	0.1	0.3	0.5	0.8	NA		NA		NA		NA	
USRN20006	MA:HYANNIS	123181	203.9	90.8	0.0	0.2	1.6	0.9	NA		NA		NA		NA	
USRN12658	MA:KINGSTON	42781	1058.5	84.7	0.0	0.0	1.0	0.8	NA		NA		NA		NA	
USRN14919	MA:LANCASTER	71581	819.4	125.7	0.2	0.3	1.6	0.9	NA		NA		NA		NA	
USRN12248	MA:LANESBORO	4 881	951.4	128.3	0.4	0.5	2.0	1.1	NA		NA		NA		NA	
USRN12271	MA:LANESBORO	4 881	-28.1	110.4	0.5	0.6	2.0	1.3	NA		NA		NA		NA	
USRN14689	MA:LITTLETON	7 881	1331.0	119.8	0.3	0.4	1.8	1.0	NA		NA		NA		NA	
USRN14918	MA:LUNENBURG	71581	1186.0	130.5	0.7	0.4	2.9	1.0	NA		NA		NA		NA	
USRN21348	MA:LYNNFIELD	3 882	1538.5	77.0	0.4	0.6	1.6	1.4	NA		NA		NA		NA	
USRN12656	MA:MARSHFIELD	42781	765.4	84.2	0.0	0.0	1.0	0.9	NA		NA		NA		NA	
USRN20007	MA:MASHPEE	123181	287.5	89.1	-0.1	0.2	1.5	0.9	NA		NA		NA		NA	
USRN21089	MA:MATTAPOISETT	21882	765.8	95.5	0.0	0.2	0.8	0.8	NA		NA		NA		NA	
USRN22399	MA:MEDFIELD	43082	741.5	89.0	-0.1	0.3	0.4	0.8	NA		NA		NA		NA	
USRN16345	MA:MEDWAY	92381	515.0	115.8	0.2	0.4	0.5	0.7	NA		NA		NA		NA	
USRN13995	MA:MERRIMAC	6 281	1554.5	100.6	1.1	0.6	0.9	0.7	NA		NA		NA		NA	
USRN12669	MA:MIDDLEBORO	42481	607.2	113.8	0.4	0.4	1.2	0.8	NA		NA		NA		NA	
USRN12672	MA:MILLBURY	41681	972.5	97.3	0.1	0.5	4.3	1.2	NA		NA		NA		NA	

Table B.13 Natural radioactivity in public groundwater systems-Massachusetts (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN16349	MA:MILLIS	92381	416.6	112.3	-0.1	0.4	1.2	0.9	NA		NA		NA		NA	
USRN23473	MA:NANTUCKET	61882	269.8	72.1	0.0	0.2	0.9	0.8	NA		NA		NA		NA	
USRN16344	MA:NATICK	92381	581.2	115.1	0.3	0.5	0.9	0.8	NA		NA		NA		NA	
USRN23870X	MA:NO. ATTLEBORO	71482	607.5	66.8	0.2	0.4	0.9	0.8	NA		NA		NA		NA	
USRN23870	MA:NO. ATTLEBORO	71482	574.6	71.7	0.3	0.5	2.5	1.0	NA		NA		NA		NA	
USRN12668	MA:NO. RAYNHAM	42481	282.4	120.9	0.4	0.5	0.9	0.8	NA		NA		NA		NA	
USRN21350	MA:NO. READING	3 882	647.5	84.2	0.1	0.3	5.4	1.2	NA		NA		NA		NA	
USRN21350X	MA:NO. READING	3 882	674.3	70.6	0.4	0.4	7.4	1.3	NA		NA		NA		NA	
USRN23869	MA:NORTON	71482	456.5	63.9	0.1	0.3	0.8	0.7	NA		NA		NA		NA	
USRN12556	MA:NORWELL	42381	822.4	102.6	0.0	0.0	1.0	0.8	NA		NA		NA		NA	
USRN20008	MA:OSTERVILLE	123181	228.1	83.9	0.1	0.2	0.6	0.7	NA		NA		NA		NA	
USRN12673	MA:OXFORD	41681	2438.5	122.0	0.3	0.4	3.5	1.0	NA		NA		NA		NA	
USRN12250X	MA:PALMER	4 981	405.1	98.2	0.0	0.0	7.0	4.3	NA		NA		NA		NA	
USRN12250	MA:PALMER	4 981	121.3	143.3	0.7	1.1	4.0	3.6	NA		NA		NA		NA	
USRN14693	MA:PEPPERELL	7 881	1015.2	116.7	0.1	0.2	1.0	0.9	NA		NA		NA		NA	
USRN23868	MA:PLAINVILLE	71482	747.0	70.8	0.2	0.5	1.0	0.8	NA		NA		NA		NA	
USRN21078	MA:PROVINCETOWN	21782	96.6	61.4	0.1	0.5	1.0	1.2	NA		NA		NA		NA	
USRN21346	MA:READING	3 882	664.7	69.8	0.1	0.9	1.5	2.0	NA		NA		NA		NA	
USRN14159	MA:ROWLEY	6 281	328.7	80.9	0.6	0.5	1.8	0.9	NA		NA		NA		NA	
USRN20004	MA:SAGAMORE	123181	288.1	91.7	-0.2	0.2	0.3	0.9	NA		NA		NA		NA	
USRN14055	MA:SALISBURY	6 281	1085.5	92.2	0.5	0.6	1.5	0.9	NA		NA		NA		NA	
USRN20009	MA:SANDWICH	123181	189.8	98.6	-0.3	0.2	0.7	0.9	NA		NA		NA		NA	
USRN21080	MA:SEEKONK	21882	164.3	90.7	-0.3	0.5	1.2	0.9	NA		NA		NA		NA	
USRN21080X	MA:SEEKONK	21882	185.8	85.4	0.1	0.4	1.0	0.9	NA		NA		NA		NA	
USRN12659	MA:SHARON	42781	1076.5	86.1	0.5	0.5	2.0	1.2	NA		NA		NA		NA	
USRN14691	MA:SHIRLEY	7 881	519.2	106.9	0.1	0.2	1.3	0.9	NA		NA		NA		NA	
USRN12671	MA:SHREWSBURY	41681	1118.0	100.6	0.3	0.6	1.4	1.1	NA		NA		NA		NA	
USRN12666	MA:SMU	42481	1564.5	132.6	0.7	0.4	1.4	0.8	NA		NA		NA		NA	
USRN21081	MA:SOUTH DENNIS	21782	88.4	60.1	0.2	0.2	1.0	0.8	NA		NA		NA		NA	
USRN14717	MA:STERLING	71581	1594.0	135.5	0.0	0.0	0.9	0.9	NA		NA		NA		NA	
USRN12249	MA:STURBRIDGE	4 981	145.1	92.5	0.0	0.0	3.0	1.0	NA		NA		NA		NA	
USRN22329	MA:SUDBURY	42882	971.5	111.7	0.4	0.4	4.0	1.4	NA		NA		NA		NA	
USRN21090X	MA:SWANSEA	21882	685.6	92.4	0.1	0.3	1.3	0.8	NA		NA		NA		NA	
USRN21090	MA:SWANSEA	21882	667.2	99.8	0.3	0.4	1.3	0.9	NA		NA		NA		NA	
USRN21206	MA:TEMPLETON	22482	915.7	119.1	-0.1	0.2	1.6	0.9	NA		NA		NA		NA	
USRN21262	MA:TEWKSBURY	22482	617.0	116.9	0.4	0.6	1.3	0.8	NA		NA		NA		NA	
USRN23472	MA:TISBURY	61682	153.9	61.7	0.0	0.3	0.9	0.9	NA		NA		NA		NA	
USRN22333	MA:TOPSFIELD	42882	789.4	109.9	0.2	0.4	1.1	0.8	NA		NA		NA		NA	
USRN14716	MA:TOWNSEND	71581	1317.0	137.9	0.1	0.2	0.9	0.9	NA		NA		NA		NA	
USRN16601	MA:UPTON	93081	573.3	114.3	-0.6	1.0	0.6	7.4	NA		NA		NA		NA	
USRN16603	MA:UXBRIDGE	93081	913.5	118.8	0.0	0.2	1.2	0.8	NA		NA		NA		NA	
USRN12272	MA:WARE	4 981	127.4	94.2	0.0	0.0	1.0	0.6	NA		NA		NA		NA	
USRN16348	MA:WAYLAND	92381	1014.9	121.1	0.3	0.4	2.2	1.1	NA		NA		NA		NA	
USRN12663	MA:WEBSTER	41681	2022.5	111.1	0.3	0.3	1.1	0.7	NA		NA		NA		NA	
USRN21349	MA:WELLESLEY	3 882	546.5	68.2	0.1	0.6	2.4	1.3	NA		NA		NA		NA	
USRN22330	MA:WENHAM	42882	838.9	121.6	0.8	0.6	1.8	1.0	NA		NA		NA		NA	
USRN22330X	MA:WENHAM	42882	877.2	114.1	1.5	0.9	2.9	1.1	NA		NA		NA		NA	
USRN12670X	MA:WEST BRIDGEWATE	42481	215.8	107.9	0.3	0.4	1.9	0.9	NA		NA		NA		NA	
USRN12670	MA:WEST BRIDGEWATE	42481	NA		0.1	0.4	1.8	1.0	NA		NA		NA		NA	
USRN14690X	MA:WESTFORD	7 881	825.6	115.6	0.3	0.5	1.6	0.9	NA		NA		NA		NA	
USRN14690	MA:WESTFORD	7 881	797.9	123.5	0.3	0.5	1.6	0.9	NA		NA		NA		NA	
USRN14688	MA:WESTFORD	7 881	526.5	111.6	0.1	0.3	1.4	0.8	NA		NA		NA		NA	
USRN16606	MA:WHITINSVILLE	93081	697.3	114.9	-0.1	0.2	0.7	0.9	NA		NA		NA		NA	

Table B.13 Natural radioactivity in public groundwater systems-Massachusetts (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN24323	MA:WILLIAMSTOWN	72782	367.5	132.3	0.6	0.6	0.5	0.7	NA		NA		NA		NA	
USRN21347	MA:WILMINGTON	3 882	860.9	73.2	0.9	0.6	3.2	1.0	NA		NA		NA		NA	
USRN22401	MA:WRENTHAM	43082	45.9	79.9	0.3	0.4	0.5	0.6	NA		NA		NA		NA	
USRN21082	MA:YARMOUTH	21782	159.2	61.7	0.0	0.2	0.9	0.8	NA		NA		NA		NA	

Table B.14 Natural radioactivity in public water systems-Minnesota

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN20936	MN:ALBERT LEA	21682	22.7	60.2	3.4	1.6	5.0	2.1	NA		NA		NA		NA	
USRN18735	MN:ALEXANDRIA	122881	175.1	204.7	0.2	1.2	3.4	2.2	NA		NA		NA		NA	
USRN20755	MN:ANOKA	2 482	424.6	96.9	8.0	1.8	9.9	2.0	5.5	0.1	4.6	1.0	0.2	0.0	0.0	0.0
USRN16767	MN:APPLE VALLEY	10 781	222.1	133.9	6.2	1.4	4.2	1.0	2.9	0.1	1.5	0.7	0.2	0.0	0.1	0.0
USRN16766	MN:AURORA	10 881	60.2	109.5	1.6	1.0	4.9	1.2	NA		NA		NA		NA	
USRN20978	MN:AUSTIN	21782	NA		2.1	1.3	1.3	1.4	NA		NA		NA		NA	
USRN17248	MN:BABBITT	102881	46.4	148.0	0.1	0.4	0.6	3.6	NA		NA		NA		NA	
USRN17899	MN:BEMIDJI	112081	248.2	260.8	0.1	0.8	1.7	1.4	NA		NA		NA		NA	
USRN17412	MN:BENSON	11 581	137.8	96.5	0.7	1.2	4.1	2.2	NA		NA		NA		NA	
USRN20756	MN:BLAINE	2 482	387.6	96.7	-0.2	0.6	2.6	1.5	NA		NA		NA		NA	
USRN17104	MN:BLOOMINGTON	101681	196.1	100.8	0.4	0.4	1.5	0.9	NA		NA		NA		NA	
USRN16949	MN:BLUE EARTH	101481	139.4	106.2	5.8	3.9	6.2	4.3	3.3	0.1	1.3	0.8	0.9	0.1	0.1	0.0
USRN16199	MN:BRAINARD	91481	466.9	108.4	0.3	0.6	2.4	1.0	NA		NA		NA		NA	
USRN20979	MN:BROOKLYN CENTER	21182	206.9	107.6	2.1	1.5	1.1	1.4	NA		NA		NA		NA	
USRN21096	MN:BROOKLYN PARK	21182	49.3	105.6	7.1	1.8	7.7	1.7	2.1	0.0	NA		0.1	0.0	0.0	0.0
USRN21134	MN:BUFFALO	22582	129.4	86.4	0.5	1.1	0.4	1.5	NA		NA		NA		NA	
USRN21132	MN:BURNSVILLE	22582	198.4	85.2	5.0	1.7	5.2	2.0	3.0	0.1	1.5	0.7	0.3	0.1	0.1	0.0
USRN20754	MN:CAMBRIDGE	2 482	432.3	97.7	1.5	0.8	1.0	0.8	NA		NA		NA		NA	
USRN21133	MN:CHANHASSEN	22582	126.5	87.1	2.5	1.6	2.6	1.8	NA		NA		NA		NA	
USRN20225	MN:CHASKA	1 882	178.7	74.3	1.3	1.1	6.8	2.6	NA		NA		NA		NA	
USRN16544*	MN:CHISOLM	10 181	-10.4	84.7	-0.1	0.4	4.1	1.1	NA		NA		NA		NA	
USRN20273	MN:CIRCLE PINES	11482	151.4	89.8	1.1	0.9	0.1	0.2	NA		NA		NA		NA	
USRN16951	MN:COON RAPIDS	101481	380.8	110.0	0.3	0.7	2.3	1.0	NA		NA		NA		NA	
USRN21136	MN:COTTAGE GROVE	22682	306.0	76.5	11.1	2.2	3.3	1.0	NA		NA		5.1	0.6	4.1	0.5
USRN18140	MN:DETROIT LAKES	12 881	74.8	75.2	0.3	0.9	3.5	2.2	NA		NA		NA		NA	
USRN18140X	MN:DETROIT LAKES	12 881	106.3	71.9	0.8	1.0	2.1	2.1	NA		NA		NA		NA	
USRN20161	MN:EAGAN	1 682	199.9	105.6	4.8	1.8	6.2	2.1	NA		NA		NA		NA	
USRN17902*	MN:EAST GRAND FORK	11 481	NA		0.5	0.6	5.1	1.2	NA		NA		NA		NA	
USRN21131	MN:EDEN PRAIRIE	22582	83.0	86.2	0.4	0.5	1.1	0.8	NA		NA		NA		NA	
USRN21138	MN:EDINA	22582	367.4	91.1	5.2	2.1	3.1	1.7	3.1	0.1	1.0	0.7	0.1	0.0	0.0	0.0
USRN20503	MN:EXCELSIOR	12582	143.1	70.8	0.8	0.8	1.8	1.3	NA		NA		NA		NA	
USRN20826	MN:FARIBAULT	2 982	220.7	61.0	4.5	1.9	3.2	1.8	NA		NA		NA		NA	
USRN17105	MN:FARMINGTON	102381	228.0	72.9	4.2	1.5	3.8	1.6	2.7	0.1	NA		0.4	0.1	0.2	0.0
USRN18569	MN:FOREST LAKE	121881	190.0	73.1	-0.8	1.1	4.4	2.7	NA		NA		NA		NA	
USRN20878	MN:FRIDLEY	21182	199.2	103.6	2.6	1.3	0.4	0.6	NA		NA		NA		NA	
USRN18059	MN:GLENCO	12 281	379.0	119.3	0.2	1.3	0.1	2.4	NA		NA		NA		NA	
USRN17900	MN:GRAND RAPIDS	111981	358.3	317.8	0.8	0.9	2.9	1.5	NA		NA		NA		NA	
USRN17900X	MN:GRAND RAPIDS	111981	349.0	303.2	1.8	1.0	4.0	1.6	NA		NA		NA		NA	
USRN17270X	MN:HASTINGS	102881	122.1	150.2	0.0	0.0	1.8	1.5	NA		NA		NA		NA	
USRN17270	MN:HASTINGS	102881	191.4	174.1	2.7	1.4	4.9	1.6	NA		NA		NA		NA	
USRN16765	MN:HIBBING	10 781	171.5	133.8	0.7	0.8	1.9	0.9	NA		NA		NA		NA	
USRN20877	MN:HOPKINS	2 982	146.4	76.1	2.1	1.1	0.2	0.5	NA		NA		NA		NA	
USRN18062	MN:HUTCHINSON	12 281	99.0	112.0	1.0	1.5	4.8	3.8	NA		NA		NA		NA	
USRN18652	MN:JACKSON	121881	53.6	250.5	0.8	2.1	4.1	4.0	NA		NA		NA		NA	
USRN20881	MN:LA CRESCENT	21082	177.4	126.2	3.6	1.3	2.4	1.2	NA		NA		NA		NA	
USRN20880	MN:LAKE CITY	21082	224.4	127.9	3.2	1.5	3.1	1.8	NA		NA		NA		NA	
USRN20880X	MN:LAKE CITY	21082	163.6	122.7	1.4	1.1	1.2	1.5	NA		NA		NA		NA	
USRN17040X	MN:LAKEVILLE	102181	171.2	60.7	4.3	1.5	3.8	1.5	3.1	0.1	NA		NA		NA	
USRN17040	MN:LAKEVILLE	102181	136.2	61.5	3.5	1.3	1.1	0.8	NA		0.7	0.7	0.1	0.0	0.0	0.0
USRN20342	MN:LE SUEUR	1 882	75.0	143.1	1.5	1.2	4.4	2.1	NA		NA		NA		NA	
USRN17801	MN:LITCHFIELD	111981	81.7	99.1	0.1	0.9	3.2	2.4	NA		NA		NA		NA	
USRN18102	MN:LITTLE FALLS	12 781	22.9	68.4	-0.1	0.3	1.8	1.0	NA		NA		NA		NA	
USRN18654	MN:LUVERNE	122181	-1.6	145.2	0.5	1.1	3.9	2.3	NA		NA		NA		NA	

Table B.14 Natural radioactivity in public water systems-Minnesota (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN17178	MN:MADISON LAKE	102681	535.7	66.9	1.9	0.9	6.3	1.9	NA		NA		NA		NA	
USRN15999	MN:MAHTOMEDI	9 981	595.2	68.3	0.6	0.6	1.6	0.9	NA		NA		NA		NA	
USRN16763	MN:MANKATO	10 781	152.1	65.2	1.6	0.8	6.9	1.4	NA		NA		NA		NA	
USRN18385	MN:MARSHALL	121481	112.2	59.7	0.0	0.0	18.7	6.7	NA		0.2	1.0	NA		NA	
USRN20543	MN:MINNETONKA	12782	64.3	100.5	4.3	2.2	10.9	3.2	NA		NA		NA		NA	
USRN17686	MN:MINNETRISTA	111681	803.3	80.3	0.6	1.3	6.7	2.5	NA		NA		NA		NA	
USRN16762	MN:MONTEVIDEO	10 681	52.6	156.3	4.8	3.1	8.7	4.1	0.2	0.0	NA		3.3	0.4	3.0	0.4
USRN17411	MN:MORRIS	11 581	12.0	92.3	2.8	2.0	7.6	2.9	NA		NA		NA		NA	
USRN20827	MN:MOUND	2 982	216.3	77.8	0.2	1.0	3.8	2.3	NA		NA		NA		NA	
USRN21077	MN:MOUNDSVIEW	21782	713.9	110.6	0.1	0.7	3.5	1.6	NA		NA		NA		NA	
USRN18139	MN:N. MANKATO	12 881	563.6	78.6	2.6	2.1	9.7	2.8	NA		NA		NA		NA	
USRN20981	MN:NEW BRIGHTON	21182	249.9	107.4	1.3	1.0	2.8	1.9	NA		NA		NA		NA	
USRN16950	MN:NEW ULM	101581	403.6	116.4	7.0	3.3	7.7	3.8	NA		3.5	0.9	0.6	0.1	0.2	0.0
USRN16950X	MN:NEW ULM	101581	460.4	92.0	11.8	4.1	5.8	3.1	6.1	0.1	NA		NA		NA	
USRN15911	MN:NEWPORT	9 381	156.8	117.6	4.0	1.1	2.4	0.8	0.6	0.0	NA		1.7	0.2	1.0	0.1
USRN18564	MN:NORTH ST. PAUL	12 981	290.9	132.3	3.1	1.2	1.4	0.8	NA		NA		NA		NA	
USRN20824	MN:NORTHFIELD	2 982	315.3	64.6	2.9	1.5	2.3	1.7	NA		NA		NA		NA	
USRN20822	MN:NORTHFIELD	2 982	83.0	60.7	9.5	2.5	6.9	2.1	5.6	0.1	3.4	0.8	0.1	0.0	0.1	0.0
USRN16248	MN:OAKDALE	91781	183.3	86.8	2.7	0.9	0.7	0.6	NA		NA		NA		NA	
USRN21107	MN:OSSEO	21082	164.1	127.2	1.0	1.0	0.7	1.5	NA		NA		NA		NA	
USRN20935	MN:OWATONNA	21682	49.2	58.7	5.8	1.8	4.7	1.5	1.6	0.0	NA		0.5	0.1	0.1	0.0
USRN17901	MN:PARK RAPIDS	111781	330.6	439.5	0.3	0.6	2.3	1.4	NA		NA		NA		NA	
USRN18651	MN:PIPESTONE	121681	1686.5	396.0	1.2	2.2	8.2	4.5	NA		NA		NA		NA	
USRN20825	MN:PLYMOUTH	2 982	389.1	69.1	2.6	1.4	2.8	1.8	NA		NA		NA		NA	
USRN20709	MN:RED WING	2 182	74.0	82.5	11.2	4.1	10.6	4.2	2.7	0.1	1.7	1.0	1.3	0.2	0.2	0.0
USRN16600X	MN:REDWOOD FALLS	10 281	-19.3	101.9	0.6	0.8	1.6	0.9	NA		NA		NA		NA	
USRN16600	MN:REDWOOD FALLS	10 281	37.2	106.8	1.0	0.8	1.8	0.9	NA		NA		NA		NA	
USRN17904	MN:RICHFIELD	112081	167.7	265.1	0.1	0.3	1.7	0.9	NA		NA		NA		NA	
USRN20879	MN:ROBBINSDALE	21182	431.5	114.0	1.6	1.5	3.0	2.1	NA		NA		NA		NA	
USRN20980	MN:ROCHESTER	21782	133.3	65.8	3.5	1.4	6.3	2.1	NA		NA		NA		NA	
USRN20980X	MN:ROCHESTER	21782	128.0	63.8	3.1	1.2	5.2	2.1	NA		NA		NA		NA	
USRN20814	MN:ROLLINGSTONE	2 882	30.5	59.2	1.3	1.0	2.0	1.7	NA		NA		NA		NA	
USRN20272	MN:ROSEMOUNT	11382	225.8	105.0	8.0	2.0	2.8	1.2	1.6	0.0	NA		0.9	0.1	0.5	0.1
USRN20162	MN:SARTELL	1 882	278.3	89.4	0.4	0.7	0.7	1.2	NA		NA		NA		NA	
USRN17698	MN:SAUK CENTRE	111781	209.1	62.7	2.5	1.8	3.6	2.0	NA		NA		NA		NA	
USRN16246	MN:SAUK RAPIDS	91781	298.8	86.5	1.7	0.9	1.7	0.9	NA		NA		NA		NA	
USRN21129	MN:SAVAGE	22582	283.5	87.9	10.1	2.4	7.0	2.0	6.4	0.1	2.8	0.8	0.1	0.0	0.0	0.0
USRN21135	MN:SHAKOPEE	22582	412.1	128.0	2.7	1.3	4.6	2.0	NA		NA		NA		NA	
USRN21115	MN:SHOREVIEW	22382	143.7	68.1	1.5	0.7	2.8	1.3	NA		NA		NA		NA	
USRN18061	MN:SILVER LAKE	12 281	226.8	114.6	2.3	1.5	4.4	2.2	NA		NA		NA		NA	
USRN17903	MN:SLEEPY EYE	112581	281.8	67.5	0.2	1.6	5.6	4.2	NA		NA		NA		NA	
USRN21137	MN:SO. ST. PAUL	22682	277.0	76.2	4.9	1.6	1.5	1.1	NA		NA		NA		NA	
USRN21095	MN:SPRING LAKE PAR	21182	519.7	113.3	6.7	1.7	7.0	1.6	3.4	0.1	3.4	0.9	0.0	0.0	0.0	0.0
USRN17554	MN:ST. ANTHONY	111381	343.1	83.4	2.5	1.3	4.3	2.0	NA		NA		NA		NA	
USRN17413	MN:ST. JAMES	11 681	110.6	71.0	0.0	0.0	2.1	2.1	NA		NA		NA		NA	
USRN16545	MN:ST. LOUIS PARK	93081	203.9	108.6	5.1	1.3	8.2	1.4	3.2	0.1	NA		0.1	0.0	0.0	0.0
USRN15913	MN:ST. PAUL	9 381	-39.8	115.8	1.3	0.8	1.8	0.9	NA		NA		NA		NA	
USRN17314	MN:ST. PETER	102981	-17.7	121.2	1.1	1.4	3.6	2.0	NA		NA		NA		NA	
USRN18127	MN:STAPLES	12 481	100.3	100.9	0.7	0.7	1.4	1.3	NA		NA		NA		NA	
USRN20813	MN:STEWARTVILLE	2 882	167.9	60.7	2.7	1.3	3.1	1.5	NA		NA		NA		NA	
USRN15774	MN:STILLWATER	82781	384.3	88.2	0.5	0.6	1.4	0.9	NA		NA		NA		NA	
USRN16764	MN:VIRGINIA	10 781	-12.4	127.2	0.8	0.7	2.8	1.0	NA		NA		NA		NA	
USRN18128	MN:WADENA	12 481	4.7	97.1	0.3	1.3	2.2	2.1	NA		NA		NA		NA	

Table 8.14 Natural radioactivity in public water systems-Minnesota (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN16310X	MN:WAITE PARK	92181	279.1	72.6	0.4	0.7	3.6	1.3	NA		NA		NA		NA	
USRN16310	MN:WAITE PARK	92181	309.0	71.1	0.3	0.6	2.4	1.1	NA		NA		NA		NA	
USRN18060X	MN:WASECA	12 381	81.7	95.7	4.1	2.0	5.3	2.2	NA		NA		NA		NA	
USRN18060	MN:WASECA	12 381	139.2	110.6	2.3	1.9	4.6	2.2	NA		NA		NA		NA	
USRN20823	MN:WAYZATA	2 982	364.1	65.3	1.1	1.6	2.1	2.0	NA		NA		NA		NA	
USRN17555	MN:WELLS	11 481	241.3	101.8	11.1	4.3	14.1	4.5	3.1	0.1	3.4	0.8	0.6	0.1	0.1	0.0
USRN18243	MN:WHITE BEAR	121181	270.8	93.3	3.1	1.3	5.4	1.6	NA		NA		NA		NA	
USRN17953	MN:WHITE BEAR LAKE	113081	114.4	97.8	0.0	0.0	2.4	1.0	NA		NA		NA		NA	
USRN17177	MN:WILLMAR	102781	36.5	60.0	3.8	2.2	-1.0	14.0	0.7	0.0	NA		0.0	0.0	0.0	0.0
USRN18653	MN:WINDOM	121881	382.7	259.3	0.2	1.2	4.2	2.3	NA		NA		NA		NA	
USRN20982	MN:WINONA	21782	98.0	62.6	1.1	1.0	4.2	2.4	NA		NA		NA		NA	
USRN21130	MN:WOODBURG	22682	595.7	88.8	1.8	1.1	0.8	0.9	0.3	0.0	NA		1.5	0.2	1.2	0.2
USRN21130X	MN:WOODBURG	22682	588.8	82.0	5.2	1.5	0.7	0.5	NA		NA		NA		NA	
USRN18650X	MN:WORTHINGTON	122181	117.6	149.0	6.2	3.6	7.1	4.3	NA		NA		5.9	0.9	4.4	0.7
USRN18650	MN:WORTHINGTON	122181	97.4	155.1	5.6	3.5	7.8	4.3	0.3	0.0	NA		NA		NA	

* Surface water supply; all others are groundwater supplies.

Table B.15 Natural radioactivity in public groundwater systems-Mississippi

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13797	MS:ABERDEEN	6 481	NA		-0.7	0.5	3.6	1.3	NA		NA		NA		NA	
USRN13791	MS:AMORY	6 481	NA		0.2	0.6	1.9	1.0	NA		NA		NA		NA	
USRN17949	MS:BAY ST. LOUIS	12 181	184.6	62.5	-0.2	1.0	1.5	2.2	NA		NA		NA		NA	
USRN24341	MS:BENTON	72882	37.5	100.9	0.0	0.0	1.2	1.1	NA		NA		NA		NA	
USRN18058	MS:BILOXI	12 281	84.9	97.2	0.5	0.7	1.4	15.1	NA		NA		NA		NA	
USRN13795	MS:BOONEVILLE	6 481	NA		0.7	0.6	4.2	1.2	NA		NA		NA		NA	
USRN13831	MS:BROOKHAVEN	6 481	16.2	69.6	0.4	0.4	1.2	0.8	NA		NA		NA		NA	
USRN13693	MS:BROOKHAVEN	6 481	16.0	69.3	0.6	0.5	1.7	0.8	NA		NA		NA		NA	
USRN24340	MS:CANTON	72882	68.4	125.6	0.1	0.5	2.3	1.1	NA		NA		NA		NA	
USRN24337	MS:CANTON	72982	16.1	86.5	-0.1	0.4	2.1	1.0	NA		NA		NA		NA	
USRN24340X	MS:CANTON	72882	23.8	71.6	0.1	0.4	1.7	0.9	NA		NA		NA		NA	
USRN24190	MS:CLINTON	72282	78.6	130.8	6.7	1.9	0.2	0.2	0.2	0.0	NA		0.0	0.0	0.0	0.0
USRN24190X	MS:CLINTON	72282	22.4	119.2	0.2	0.8	1.9	1.4	NA		NA		0.0	0.0	0.0	0.0
USRN13695	MS:COLUMBIA	6 481	1.7	67.9	0.2	0.2	3.3	1.1	NA		NA		NA		NA	
USRN13640X	MS:COLUMBUS	6 381	NA		0.0	0.0	4.8	1.1	NA		NA		NA		NA	
USRN13644	MS:COLUMBUS	6 381	NA		0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN13640	MS:COLUMBUS	6 381	NA		2.3	0.6	2.8	0.8	NA		NA		NA		NA	
USRN13790	MS:CORINTH	6 481	NA		0.3	0.7	4.4	1.3	NA		NA		NA		NA	
USRN13790X	MS:CORINTH	6 481	NA		0.2	0.8	5.3	1.3	NA		NA		NA		NA	
USRN13694	MS:CRYSTAL SPRINGS	6 481	6.0	69.3	1.3	0.6	9.8	1.5	NA		NA		NA		NA	
USRN18048	MS:ELLISVILLE	12 381	115.3	83.6	0.8	0.6	3.8	1.1	NA		NA		NA		NA	
USRN18057	MS:ELLISVILLE	12 381	154.1	85.2	0.2	0.4	0.8	0.9	NA		NA		NA		NA	
USRN18012	MS:ESATAQUA	12 281	385.4	67.4	-0.2	1.7	0.3	4.8	NA		NA		NA		NA	
USRN13638	MS:FOREST	9 999	NA		0.5	0.7	1.9	1.0	NA		NA		NA		NA	
USRN13796	MS:FULTON	6 481	NA		-0.1	0.2	1.1	0.9	NA		NA		NA		NA	
USRN18054	MS:GLENDALE	12 381	107.7	85.3	0.3	0.6	1.3	0.9	NA		NA		NA		NA	
USRN18007	MS:GULFPORT	12 281	272.4	66.5	0.1	0.5	0.4	0.8	NA		NA		NA		NA	
USRN18013	MS:GULFPORT	12 281	220.5	64.9	-0.1	0.7	0.7	1.5	NA		NA		NA		NA	
USRN18050X	MS:HATTIESBURG	12 381	72.2	84.1	0.4	0.4	3.7	1.1	NA		NA		NA		NA	
USRN18051	MS:HATTIESBURG	12 381	32.6	82.4	0.2	0.3	1.6	0.9	NA		NA		NA		NA	
USRN18050	MS:HATTIESBURG	12 381	30.0	98.2	0.3	0.5	3.4	1.0	NA		NA		NA		NA	
USRN13699	MS:HAZELHURST	6 481	92.0	70.9	0.3	0.3	4.4	1.1	NA		NA		NA		NA	
USRN13794	MS:HOLLY SPRINGS	6 581	NA		2.3	0.6	5.2	1.1	NA		NA		NA		NA	
USRN24345	MS:JACKSON	72882	56.7	101.9	0.0	0.0	0.8	1.4	NA		NA		NA		NA	
USRN24100	MS:JACKSON	72282	42.2	130.1	0.2	0.9	1.5	1.4	NA		NA		NA		NA	
USRN24105	MS:JACKSON	72282	34.1	114.7	0.2	1.5	2.3	2.0	NA		NA		NA		NA	
USRN24103	MS:JACKSON	72282	18.5	114.2	0.6	1.3	3.1	2.2	NA		NA		NA		NA	
USRN24104	MS:JACKSON	72282	-18.0	119.6	0.9	1.4	2.1	2.0	NA		NA		NA		NA	
USRN24101	MS:JACKSON	72282	59.5	120.5	0.3	1.2	1.0	1.4	NA		NA		NA		NA	
USRN24100X	MS:JACKSON	72282	88.9	120.4	1.8	1.2	3.8	1.6	NA		NA		NA		NA	
USRN18056	MS:KEESLER AFB	12 281	43.0	96.2	-0.1	0.5	0.2	1.1	NA		NA		NA		NA	
USRN18052	MS:LAUREL	12 381	36.0	82.9	-1.6	0.6	2.3	1.1	NA		NA		NA		NA	
USRN18053	MS:LAUREL	12 381	86.7	84.0	-0.1	0.3	0.8	0.9	NA		NA		NA		NA	
USRN17946	MS:LONG BEACH	12 181	118.4	59.2	0.9	0.6	1.2	0.8	NA		NA		NA		NA	
USRN13636	MS:LOUISVILLE	6 381	NA		0.4	0.4	3.2	1.0	NA		NA		NA		NA	
USRN18014	MS:LUCEDALE	12 281	-3.8	63.0	-0.1	0.4	0.7	0.9	NA		NA		NA		NA	
USRN18009	MS:MARTINS BLUFF	12 281	110.1	64.2	-0.9	1.1	2.9	4.3	NA		NA		NA		NA	
USRN13691	MS:MCCOMB	6 581	34.9	70.1	0.2	0.3	4.1	1.1	NA		NA		NA		NA	
USRN13645	MS:MERIDIAN NAS	9 999	NA		0.2	0.3	2.4	1.0	NA		NA		NA		NA	
USRN13643	MS:MISS. STATE UNI	9 999	NA		0.3	0.4	3.7	1.1	NA		NA		NA		NA	
USRN13787	MS:MOOREVILLE	6 481	NA		0.5	0.5	3.3	1.1	NA		NA		NA		NA	
USRN18010	MS:MOSS POINT	12 281	154.6	75.7	-1.1	1.1	-2.9	3.3	0.1	0.0	NA		0.0	0.0	0.1	0.0
USRN18010X	MS:MOSS POINT	12 281	139.0	65.6	1.1	2.1	-1.1	4.8	NA		NA		0.0	0.0	0.1	0.0

Table B.15 Natural radioactivity in public groundwater systems-Mississippi (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13692	MS:NATCHEZ	6 581	48.7	72.5	0.3	0.7	8.1	1.6	NA		NA		NA		NA	
USRN13690	MS:NATCHEZ	6 581	NA		0.3	0.7	5.3	1.3	NA		NA		NA		NA	
USRN13690X	MS:NATCHEZ	6 581	31.3	63.7	0.2	0.6	4.9	1.3	NA		NA		NA		NA	
USRN13637	MS:NEWTON	6 281	NA		0.0	0.0	2.6	1.0	NA		NA		NA		NA	
USRN18011	MS:OCEAN SPRINGS	12 281	121.0	63.8	-0.1	0.8	0.9	2.1	NA		NA		NA		NA	
USRN13792	MS:OKOLONA	6 481	NA		0.3	0.5	1.1	0.9	NA		NA		NA		NA	
USRN18008	MS:PASCAGOULA	12 281	-13.8	62.4	0.1	0.3	0.5	0.9	NA		NA		NA		NA	
USRN17947	MS:PASS CHRISTIAN	12 181	129.9	59.6	1.0	1.2	1.7	1.8	NA		NA		NA		NA	
USRN24102	MS:PEARL	72232	85.3	116.0	1.2	1.2	0.5	0.9	NA		NA		NA		NA	
USRN18055	MS:PETAL	12 381	429.1	89.8	0.1	0.2	1.2	0.8	NA		NA		NA		NA	
USRN13641	MS:PHILADELPHIA	9 999	NA		0.1	0.3	2.2	0.9	NA		NA		NA		NA	
USRN17948	MS:PICAYUNE	12 181	130.3	61.0	-0.1	0.4	1.1	0.9	NA		NA		NA		NA	
USRN24344	MS:PORT GIBSON	72882	21.1	71.0	3.4	1.7	9.2	2.8	0.3	0.0	NA		0.1	0.0	0.1	0.0
USRN13639	MS:QUITMAN	6 281	NA		-0.2	0.5	1.4	1.1	NA		NA		NA		NA	
USRN24192	MS:RICHLAND	72282	-51.3	112.0	0.3	1.2	1.1	1.4	NA		NA		NA		NA	
USRN24339	MS:RIDGELAND	72982	21.6	87.0	1.9	1.5	-1.0	3.8	NA		NA		NA		NA	
USRN13793	MS:RIPLEY	6 581	NA		0.1	0.6	3.5	1.1	NA		NA		NA		NA	
USRN13642	MS:STARKVILLE	6 381	NA		0.5	0.5	2.7	1.7	NA		NA		NA		NA	
USRN24193	MS:TERRY	72282	67.9	119.6	-0.3	1.4	2.8	2.2	NA		NA		NA		NA	
USRN13786	MS:TUPELO	6 481	NA		0.6	0.7	3.1	1.1	NA		NA		NA		NA	
USRN13788	MS:VERONA	6 481	NA		0.1	0.5	3.9	1.2	NA		NA		NA		NA	
USRN24342	MS:VICKSBURG	72882	-1.2	99.1	0.8	1.6	4.3	2.3	NA		NA		NA		NA	
USRN24338	MS:VICKSBURG	72882	-6.2	99.7	0.0	0.4	1.2	0.9	NA		NA		NA		NA	
USRN13689	MS:WASHINGTON-NATC	6 581	144.3	65.6	-0.1	1.0	3.1	1.9	NA		NA		NA		NA	
USRN17950X	MS:WAVELAND	12 181	158.6	60.9	0.6	0.9	1.0	1.2	NA		NA		NA		NA	
USRN17950	MS:WAVELAND	12 181	203.3	63.6	-0.3	0.6	0.7	1.4	NA		NA		NA		NA	
USRN18049	MS:WAYNESBORO	12 381	104.0	86.2	-0.1	0.7	2.1	2.1	NA		NA		NA		NA	
USRN13789	MS:WEST POINT	6 481	NA		0.1	0.2	4.2	1.1	NA		NA		NA		NA	
USRN24191	MS:WHITFIELD	72282	58.1	114.7	0.3	1.4	0.8	2.4	NA		NA		NA		NA	
USRN13830	MS:WOODVILLE	6 581	NA		0.2	0.4	2.0	0.9	NA		NA		NA		NA	
USRN13830X	MS:WOODVILLE	6 581	1.5	63.2	0.0	0.0	1.6	1.0	NA		NA		NA		NA	
USRN24343	MS:YAZOO CITY	72882	18.8	100.5	0.4	0.7	0.4	0.9	NA		NA		NA		NA	

Table B.16 Natural radioactivity in public water systems-Montana

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14954	MT:ASHLAND	72181	165.8	82.3	1.0	2.1	8.1	4.8	NA		NA		NA		NA	
USRN11316	MT:BAKER	31281	350.2	59.4	3.0	3.1	0.0	0.0	0.1	0.0	NA		NA		NA	
USRN11048	MT:BELGRADE	22681	890.0	84.3	2.3	0.9	3.4	0.7	NA		NA		NA		NA	
USRN11045	MT:BOULDER	22681	881.2	88.1	0.7	0.5	2.0	0.6	NA		NA		NA		NA	
USRN11042	MT:BROWNING	22481	534.3	112.0	0.1	0.6	2.0	0.8	NA		NA		NA		NA	
USRN11047	MT:CHOTEAU	22381	102.5	122.6	0.7	0.8	0.4	0.5	NA		NA		NA		NA	
USRN14955*	MT:COLSTRIP	72181	-41.0	78.1	0.6	0.8	3.2	1.2	NA		NA		NA		NA	
USRN12337	MT:COLUMBUS	41681	392.1	92.5	1.0	0.5	2.0	1.1	NA		NA		NA		NA	
USRN11646	MT:FAIRVIEW	32581	110.7	80.3	1.0	3.3	11.0	3.4	NA		NA		NA		NA	
USRN11731	MT:GLASGOW	32781	87.4	69.4	0.5	0.8	0.6	0.5	NA		NA		NA		NA	
USRN13349	MT:GLENDIVE	51981	362.0	74.2	1.0	2.4	7.5	4.5	0.1	0.0	NA		NA		NA	
USRN11214	MT:HAMILTON	3 281	1258.0	56.8	0.9	0.5	2.0	0.6	NA		NA		NA		NA	
USRN12088	MT:HARLOWTON	4 381	75.1	48.7	3.0	3.1	2.0	2.3	0.1	0.0	NA		0.2	0.0	0.1	0.0
USRN12237	MT:HAVRE	41281	-7.8	104.9	0.3	0.7	2.0	1.1	NA		NA		NA		NA	
USRN11225	MT:KALISPELL	3 581	377.6	62.3	0.9	0.6	2.0	0.6	NA		NA		NA		NA	
USRN14956	MT:LAME DEER	72181	694.2	93.6	1.9	2.0	7.7	4.7	NA		NA		NA		NA	
USRN11317	MT:LEWISTON	31281	100.1	55.1	0.8	0.6	0.2	0.4	NA		NA		NA		NA	
USRN11668	MT:MALTA	32781	540.8	73.1	1.0	0.6	0.7	0.5	NA		NA		NA		NA	
USRN11117	MT:MISSOULA	3 381	1889.5	56.7	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN11315	MT:PLAINS	3 481	377.5	67.7	0.0	0.0	0.6	0.6	NA		NA		NA		NA	
USRN11642	MT:PLENTYWOOD	32681	756.5	77.3	6.0	3.7	5.0	2.8	0.2	0.0	NA		2.9	0.3	2.3	0.2
USRN11643	MT:POPLAR	32681	434.2	73.8	2.0	3.1	5.0	3.3	NA		NA		NA		NA	
USRN12733	MT:RAPELJE	42981	1176.0	111.4	15.5	5.9	6.0	3.5	0.3	0.0	NA		13.0	1.3	7.1	0.7
USRN12989	MT:ROUNDUP	5 681	47.4	101.5	6.2	4.5	7.1	4.4	0.6	0.0	NA		2.1	0.2	1.1	0.1
USRN11645	MT:SCOBEY	32681	199.4	72.4	0.3	2.2	0.4	0.3	NA		NA		NA		NA	
USRN11044	MT:SHELBY	22481	306.1	107.2	0.8	0.8	2.0	0.6	NA		NA		NA		NA	
USRN11644	MT:SIDNEY	32581	198.4	81.3	0.0	0.0	7.0	3.0	NA		NA		NA		NA	
USRN11160	MT:SUPERIOR	3 481	669.8	83.7	1.0	0.5	0.9	0.5	NA		NA		NA		NA	
USRN11160X	MT:SUPERIOR	3 481	619.9	72.6	1.0	0.5	1.0	0.4	NA		NA		NA		NA	
USRN11041	MT:THREE FORKS	22681	299.1	77.6	2.0	1.0	7.0	1.0	NA		NA		NA		NA	
USRN11043	MT:TOWNSEND	22681	619.8	80.0	4.0	1.2	5.0	0.9	0.1	0.0	NA		NA		NA	
USRN11046	MT:WARM SPRINGS	22481	318.6	110.0	9.0	4.0	3.0	1.9	0.1	0.0	NA		7.7	0.7	4.6	0.5
USRN11083	MT:WHITEHALL	22781	679.4	72.1	31.0	4.3	2.0	0.4	0.2	0.0	NA		16.2	1.5	8.8	0.8
USRN11838	MT:WOLF POINT	32681	73.3	74.7	0.2	0.4	0.7	0.6	NA		NA		NA		NA	
USRN13328	MT:WORDEN	52281	438.8	103.1	1.8	1.6	3.0	1.8	0.1	0.0	NA		NA		NA	

* Surface water supply; all others are groundwater supplies.

Table B.17 Natural radioactivity in public groundwater systems-Nevada

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN03385	NV:BATTLE MOUNTAIN	121180	933.2	69.7	3.5	1.3	5.2	0.8	0.1	0.0	NA		NA		NA	
USRN10791	NV:CALIENTE	21281	502.5	116.6	8.0	1.6	0.6	0.2	0.1	0.0	NA		NA		NA	
USRN03383	NV:CARLIN	121180	163.1	66.8	4.9	1.4	8.6	1.0	0.4	0.0	NA		NA		NA	
USRN03384	NV:ELKO	121080	533.1	77.2	3.8	1.3	9.9	1.2	0.1	0.0	NA		NA		NA	
USRN10853	NV:ELY	21381	1310.5	65.5	4.0	1.0	0.4	0.2	0.5	0.0	NA		NA		NA	
USRN10520X	NV:FALLON	2 381	32.8	38.1	0.2	0.7	6.0	1.0	NA		NA		NA		NA	
USRN10520	NV:FALLON	2 381	NA		0.0	0.0	7.3	1.2	NA		NA		NA		NA	
USRN10263	NV:FALLON	12181	-84.9	79.2	1.4	1.0	5.1	1.1	NA		NA		NA		NA	
USRN10521	NV:FERNLEY	2 381	-9.9	37.2	2.4	1.1	5.0	1.0	NA		NA		NA		NA	
USRN10264	NV:GARDNERVILLE	12181	716.4	85.6	4.2	1.1	1.5	0.4	0.2	0.0	NA		NA		NA	
USRN10262	NV:GARDNERVILLE	12181	724.4	86.9	0.0	0.0	1.4	0.6	NA		NA		NA		NA	
USRN10689	NV:JEAN	21081	118.4	39.0	1.3	0.9	4.5	1.0	NA		NA		NA		NA	
USRN10690	NV:LAS VEGAS	21081	NA		2.0	1.8	4.4	1.5	NA		NA		NA		NA	
USRN10690X	NV:LAS VEGAS	21081	222.8	47.9	2.0	1.6	6.5	1.8	NA		NA		NA		NA	
USRN03443	NV:LOVELOCK	12 880	714.8	53.4	4.4	1.2	2.2	0.4	0.2	0.0	NA		NA		NA	
USRN10790X	NV:MERCURY	21181	135.6	78.3	3.8	1.3	2.6	0.7	0.1	0.0	NA		NA		NA	
USRN10790	NV:MERCURY	21181	NA		4.0	1.2	3.4	0.8	NA		NA		NA		NA	
USRN10720	NV:MESQUITE	21181	NA		10.0	4.1	4.3	2.3	NA		NA		1.6	0.2	0.6	0.1
USRN10720X	NV:MESQUITE	21181	237.8	81.6	9.0	4.1	0.6	0.7	0.1	0.0	NA		NA		NA	
USRN10719	NV:MOAPA	21181	104.5	80.2	2.9	1.1	9.0	1.1	NA		NA		NA		NA	
USRN03417	NV:RENO	121880	413.5	71.8	1.3	1.1	10.1	1.1	NA		NA		NA		NA	
USRN10378	NV:RENO	12681	563.5	42.1	3.2	1.1	2.5	0.6	NA		NA		NA		NA	
USRN03416	NV:RENO	121880	1104.0	77.3	5.0	1.1	11.2	3.2	0.2	0.0	NA		NA		NA	
USRN03422	NV:RENO	121880	452.5	67.9	0.8	0.8	5.4	0.9	NA		NA		NA		NA	
USRN03327	NV:SPRING CREEK	121080	204.2	79.2	11.0	2.1	6.0	0.8	0.2	0.0	NA		5.1	0.5	3.1	0.3
USRN10610	NV:TONOPAH	2 981	NA		5.0	1.3	4.7	0.8	0.1	0.0	NA		NA		NA	
USRN10610X	NV:TONOPAH	2 981	360.4	41.3	4.1	1.2	3.6	0.7	NA		NA		NA		NA	
USRN03326	NV:WELLS	121080	221.1	75.2	3.0	1.1	7.0	1.0	NA		NA		NA		NA	
USRN03312	NV:WINNEMUCCA	12 880	91.3	45.9	6.2	1.7	5.4	0.8	0.1	0.0	NA		5.4	0.5	2.4	0.3
USRN10522	NV:YERINGTON	2 381	1348.5	47.5	0.3	0.5	2.8	0.7	NA		NA		NA		NA	

Table B.18 Natural radioactivity in public groundwater systems-New Hampshire

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15351	NH:ALTON	8 681	1588.0	111.2	0.1	0.3	1.1	0.9	NA		NA		NA		NA	
USRN15704	NH:AMHERST	82081	2500.0	125.0	0.2	0.4	2.7	1.1	NA		NA		NA		NA	
USRN15703	NH:BRISTOL	81981	1427.0	127.5	0.3	0.3	1.3	0.8	NA		NA		NA		NA	
USRN15037	NH:COLEBROOK	72781	737.7	95.9	0.3	0.4	1.9	0.9	NA		NA		NA		NA	
USRN14511	NH:CONWAY	7 981	2368.0	118.4	0.2	0.4	1.2	0.9	NA		NA		NA		NA	
USRN12437	NH:DERRY	42081	1032.8	93.0	0.3	0.6	5.0	1.1	NA		NA		NA		NA	
USRN16352	NH:EPPING	92481	1995.0	119.7	3.4	1.0	8.1	1.4	0.4	0.0	NA		1.1	0.2	1.1	0.2
USRN12565	NH:EXETER	42381	68.7	89.7	0.0	0.0	1.0	0.8	NA		NA		NA		NA	
USRN15352	NH:FARMINGTON	8 581	3799.0	152.0	0.1	0.3	1.2	0.9	NA		NA		NA		NA	
USRN16141	NH:FRANKLIN	91581	111.4	82.5	0.2	0.2	0.8	0.7	NA		NA		NA		NA	
USRN13224	NH:HAMPTON	51581	1306.5	150.0	0.1	0.5	1.7	1.0	NA		NA		NA		NA	
USRN15773	NH:HENNIKER	82781	277.4	88.8	0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN12939	NH:HINSDALE	5 681	549.1	112.1	0.0	0.2	1.4	0.9	NA		NA		NA		NA	
USRN12471	NH:HOOKSET	42181	3442.5	137.7	0.6	0.5	4.0	1.2	NA		NA		NA		NA	
USRN13131	NH:HUDSON	51381	2579.5	103.2	0.5	0.5	1.6	0.8	NA		NA		NA		NA	
USRN12736	NH:MERRIMACK	42981	1709.0	144.8	0.4	0.3	1.0	0.7	NA		NA		NA		NA	
USRN13223	NH:MILFORD	51981	866.6	90.9	0.3	0.5	1.8	0.9	NA		NA		NA		NA	
USRN13317	NH:N. SUTTON	52281	1691.5	118.5	0.2	0.3	1.3	0.8	NA		NA		NA		NA	
USRN14959	NH:N. WALPOLE	72481	453.1	79.5	0.2	0.2	1.7	0.9	NA		NA		NA		NA	
USRN15910	NH:PEMBROKE	9 381	973.3	141.1	0.5	0.3	0.4	0.6	NA		NA		NA		NA	
USRN15910X	NH:PEMBROKE	9 381	871.7	135.1	0.7	0.4	1.0	0.7	NA		NA		NA		NA	
USRN15177	NH:PLYMOUTH	73181	2079.0	124.8	-0.2	0.2	0.7	0.8	NA		NA		NA		NA	
USRN16353	NH:RAYMOND	92481	593.2	100.9	2.3	0.7	2.3	0.8	NA		NA		NA		NA	
USRN15353	NH:ROLLINSFORD	8 581	583.7	110.7	0.1	0.3	1.6	0.9	NA		NA		NA		NA	
USRN15118	NH:SEABROOK	72981	715.8	136.0	0.2	0.7	4.6	1.2	NA		NA		NA		NA	
USRN15036	NH:WHITEFIELD	72781	2577.0	128.9	0.2	0.3	1.3	0.9	NA		NA		NA		NA	
USRN12938	NH:WINCHESTER	5 681	161.3	107.3	0.4	0.3	0.5	0.6	NA		NA		NA		NA	

Table B.19 Natural radioactivity in public groundwater systems-New Mexico

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/1)	2SIGMA ERROR	ALPHA (pCi/1)	2SIGMA ERR	BETA (pCi/1)	2SIG ERR	Ra-226 (pCi/1)	2SIGMA ERR	Ra-228 (pCi/1)	2SIGMA ERR	U-234 (pCi/1)	2SIGMA ERR	U-238 (pCi/1)	2SIGMA ERROR
USRN16482	NM:ALAMOGORDO	92481	323.0	93.8	4.1	3.0	0.0	0.0	NA		NA		NA		NA	
USRN15038	NM:ALBUQUERQUE	72881	125.3	130.0	2.6	1.1	4.5	1.2	NA		NA		NA		NA	
USRN15041	NM:ALBUQUERQUE	72881	265.8	84.6	2.4	0.9	6.5	1.3	NA		NA		NA		NA	
USRN15043	NM:ALBUQUERQUE	72881	1329.0	272.3	4.2	1.2	2.1	0.8	0.2	0.0	NA		2.4	0.3	1.2	0.2
USRN17416	NM:ANTHONY	11 581	16.6	91.9	3.2	4.2	16.6	6.3	0.2	0.0	NA		3.4	0.4	1.3	0.2
USRN17805	NM:ARTESIA	111781	24.7	72.9	3.1	3.4	3.7	4.0	0.2	0.0	NA		1.6	0.2	0.4	0.1
USRN17802	NM:ARTESIA	111781	36.9	72.8	0.9	2.5	2.5	4.0	NA		NA		NA		NA	
USRN20869	NM:BAYARD	2 482	282.8	102.5	0.3	1.1	1.2	2.0	NA		NA		NA		NA	
USRN15900X	NM:BELEN	9 281	338.6	149.0	2.6	1.1	4.8	1.3	NA		NA		NA		NA	
USRN15900	NM:BELEN	9 281	384.6	157.4	2.4	1.1	4.2	1.1	NA		NA		NA		NA	
USRN15899	NM:BELEN	9 281	29.6	143.9	6.4	1.5	5.7	1.1	0.2	0.0	NA		3.9	0.4	2.0	0.2
USRN15040X	NM:BERNALILLO	72881	140.2	128.0	2.1	1.1	9.1	1.6	NA		NA		NA		NA	
USRN15040	NM:BERNALILLO	72881	185.1	157.8	1.7	1.0	8.5	1.5	NA		NA		NA		NA	
USRN15700X	NM:CANNON AFB	82081	164.8	89.4	2.2	1.0	3.4	1.1	NA		NA		NA		NA	
USRN15700	NM:CANNON AFB	82081	252.4	97.7	2.2	1.0	3.9	1.1	NA		NA		NA		NA	
USRN17813	NM:CARLSBAD	111981	18.0	118.8	1.9	1.9	3.9	2.1	NA		NA		NA		NA	
USRN17814	NM:CARLSBAD	111781	66.6	73.0	1.8	1.3	0.9	1.3	NA		NA		NA		NA	
USRN17759	NM:CARLSBAD CAVERN	111881	-157.3	118.8	2.1	1.4	1.1	1.7	NA		NA		NA		NA	
USRN20808	NM:CENTRAL	2 482	194.6	88.7	2.9	1.7	1.9	1.6	NA		NA		NA		NA	
USRN17004	NM:CHAMA	101481	83.3	104.0	0.3	0.5	1.9	0.7	NA		NA		NA		NA	
USRN17415	NM:CHAPARRAL	11 581	92.2	93.8	0.7	1.5	3.9	2.4	NA		NA		NA		NA	
USRN17625	NM:CLAYTON	111381	295.4	78.0	7.0	1.8	6.6	2.0	2.8	0.1	NA		2.1	0.2	1.2	0.2
USRN16455	NM:CLOUDCROFT	92481	85.4	92.2	1.1	0.7	-0.3	3.2	NA		NA		NA		NA	
USRN15711	NM:CLOVIS	82081	66.9	87.5	3.1	2.1	8.6	5.0	0.1	0.0	NA		3.4	0.4	2.1	0.2
USRN16848	NM:CUBA	101381	325.6	71.4	1.1	2.7	8.3	4.7	NA		NA		NA		NA	
USRN20736	NM:DEMING	2 382	282.8	103.2	1.4	0.9	1.5	0.9	NA		NA		NA		NA	
USRN17699	NM:DEXTER	111781	239.4	77.8	4.3	2.7	-1.1	17.8	0.4	0.0	NA		2.5	0.3	0.6	0.1
USRN20441	NM:DIXON	12182	628.3	106.8	20.3	3.7	-0.4	0.2	0.1	0.0	NA		9.2	1.2	5.7	0.8
USRN17497	NM:DONA ANA	11 481	732.5	116.7	9.3	3.5	13.5	4.4	0.2	0.0	NA		6.6	0.7	2.5	0.3
USRN20439	NM:ESPANOLA	12182	323.0	86.2	24.1	4.0	-0.9	0.5	0.1	0.0	NA		10.4	2.0	6.5	1.3
USRN17808	NM:EUNICE	111981	-57.7	98.3	3.7	1.9	5.1	2.2	0.2	0.0	NA		1.7	0.2	0.7	0.1
USRN15697	NM:FT. SUMNER	82081	881.7	101.4	8.8	3.6	7.1	3.8	1.5	0.0	NA		4.4	0.4	3.0	0.3
USRN17113	NM:GALLUP	102281	401.6	85.9	2.7	2.6	5.0	4.0	NA		NA		NA		NA	
USRN17201	NM:GRANTS	102381	477.4	76.1	7.3	3.4	1.8	1.9	0.3	0.0	NA		2.8	0.3	1.2	0.2
USRN17700	NM:HAGERMAN	111781	363.9	90.8	0.0	0.0	6.3	6.2	NA		NA		NA		NA	
USRN17700X	NM:HAGERMAN	111781	409.5	79.8	3.6	4.8	4.9	5.3	NA		NA		NA		NA	
USRN17427	NM:HATCH	11 381	120.1	128.9	5.4	2.0	6.8	2.4	0.1	0.0	NA		3.7	0.4	2.1	0.3
USRN17807	NM:HOBBS	111981	45.8	102.9	2.9	1.7	1.9	1.7	NA		NA		NA		NA	
USRN20810	NM:HURLEY	2 482	63.9	91.4	1.3	1.0	2.0	1.3	NA		NA		NA		NA	
USRN20810X	NM:HURLEY	2 482	43.5	85.7	2.8	1.2	1.2	1.0	NA		NA		NA		NA	
USRN17806	NM:JAL	111981	9.0	98.7	4.7	2.1	4.5	2.0	0.2	0.0	NA		3.4	0.4	1.9	0.3
USRN15042	NM:KIRKLAND AFB	72881	201.3	129.6	2.2	1.0	3.2	1.0	NA		NA		NA		NA	
USRN20438	NM:LA ALAMOS	12182	49.6	83.4	2.7	1.0	2.7	1.1	NA		NA		NA		NA	
USRN16483	NM:LA LUZ	92481	37.2	91.1	-0.4	3.3	-2.1	4.9	NA		NA		NA		NA	
USRN17414	NM:LAS CRUCES	11 581	390.1	101.2	11.2	3.0	6.3	2.0	0.2	0.0	NA		7.2	0.8	3.3	0.4
USRN20828	NM:LORDSBURG	2 482	445.6	93.0	17.8	6.2	1.7	1.6	0.1	0.0	NA		12.6	1.6	10.2	1.3
USRN15901	NM:LOS LUNAS	9 281	160.4	146.4	2.0	0.9	2.8	1.0	NA		NA		NA		NA	
USRN17760X	NM:LOVING	111881	190.4	122.6	1.9	1.7	1.6	1.7	NA		NA		NA		NA	
USRN17760	NM:LOVING	111881	283.1	147.4	4.1	1.8	0.2	0.4	0.1	0.0	NA		1.7	0.2	0.5	0.1
USRN17804	NM:LOVINGTON	111981	-36.7	99.5	1.0	1.7	2.1	2.1	NA		NA		NA		NA	
USRN20868	NM:MAGDALENA	2 582	-9.0	83.7	5.6	1.9	2.5	1.5	0.2	0.0	NA		2.8	0.4	0.9	0.1
USRN17200	NM:MILAN	102381	184.6	84.9	10.1	3.2	4.7	2.8	0.5	0.1	NA		2.9	0.6	1.6	0.4
USRN17200X	NM:MILAN	102381	304.9	74.6	8.8	3.5	8.2	4.1	NA		NA		NA		NA	

Table B.19 Natural radioactivity in public groundwater systems-New Mexico (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN17599	NM:MORA	111181	1166.0	122.3	0.7	0.7	0.6	0.8	NA		NA		NA		NA	
USRN15902	NM:MORIARITY	9 281	306.4	146.1	9.5	4.4	1.7	2.0	0.1	0.0	NA		6.1	0.6	2.2	0.3
USRN15898	NM:MOUNTAINAIR	9 281	-32.6	140.4	2.1	1.0	1.2	0.8	NA		NA		NA		NA	
USRN17419	NM:NM STATE UNIV.	11 481	-81.7	103.3	4.5	1.8	6.4	2.2	0.2	0.0	NA		2.5	0.3	2.1	0.3
USRN17600	NM:PECOS	111281	-2.4	101.9	5.3	1.8	0.7	0.6	0.3	0.0	NA		2.5	0.3	1.6	0.2
USRN17600X	NM:PECOS	111281	59.5	86.8	5.6	1.9	0.1	0.1	NA		NA		NA		NA	
USRN15702	NM:PORTALES	82081	263.8	96.3	5.5	1.4	3.8	0.9	0.2	0.0	NA		4.2	0.4	2.8	0.3
USRN15039	NM:RIO RANCHO	72881	404.1	131.0	0.7	0.6	2.4	1.0	NA		NA		NA		NA	
USRN17809	NM:ROSWELL	111681	52.1	74.0	0.8	2.6	3.7	4.1	NA		NA		NA		NA	
USRN17803	NM:ROSWELL	111681	230.6	76.4	3.9	3.9	3.7	3.8	0.6	0.0	NA		1.5	0.2	0.4	0.1
USRN16547	NM:RUIDOSO DOWNS	92581	-89.2	72.5	0.4	2.7	1.5	3.7	NA		NA		NA		NA	
USRN17202	NM:SAN RAFAEL	102381	295.7	73.9	5.5	3.9	6.3	3.9	0.1	0.0	NA		3.9	0.4	1.8	0.2
USRN20440	NM:SANTA CRUZ	12182	365.0	92.6	24.4	3.1	-0.2	0.1	0.1	0.0	NA		10.6	1.5	8.1	1.1
USRN20440X	NM:SANTA CRUZ	12182	391.8	88.1	23.3	3.0	2.4	0.6	NA		NA		NA		NA	
USRN15701	NM:SANTA ROSA	81981	-97.6	141.4	0.9	0.8	1.6	0.9	NA		NA		NA		NA	
USRN20809	NM:SILVER CITY	2 482	74.9	86.1	8.7	1.8	2.0	0.7	NA		NA		NA		NA	
USRN20737	NM:SOCORRO	2 382	42.1	101.6	4.1	1.2	2.8	1.0	NA		NA		NA		NA	
USRN17558	NM:STATE PENITENTI	11 281	544.0	65.3	2.7	1.0	1.1	0.7	NA		NA		NA		NA	
USRN17417	NM:SUNLAND PARK	11 581	-18.3	91.0	0.8	3.0	5.6	5.2	NA		NA		NA		NA	
USRN20437	NM:TAOS	12282	575.0	92.0	4.6	1.8	0.3	0.3	NA		NA		NA		NA	
USRN15699	NM:TEXICO	82081	494.5	96.7	4.7	1.4	4.0	1.1	0.2	0.0	NA		3.2	0.4	1.8	0.2
USRN20735	NM:TRUTH OR CONSEQ	2 382	366.4	104.1	2.5	2.6	4.3	3.7	NA		NA		NA		NA	
USRN15621	NM:TUCUMCARI	81981	501.3	111.5	18.3	4.2	3.6	1.8	0.2	0.0	NA		13.4	1.3	7.4	0.7
USRN15698	NM:VAUGHN	82081	1205.5	96.5	34.5	3.4	-3.2	1.2	0.1	0.0	NA		41.5	3.7	8.0	0.8
USRN17418	NM:WHITE SANDS MR	11 481	443.3	117.0	1.9	1.3	2.2	1.3	NA		NA		NA		NA	

Table B.20 Natural radioactivity in public groundwater systems—New York

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14653	NY:ALDEN	71481	70.0	80.2	1.4	2.1	9.5	4.5	NA		NA		NA		NA	
USRN14839	NY:ALFRED	71481	469.8	79.9	0.2	0.3	1.5	0.9	NA		NA		NA		NA	
USRN14840X	NY:ALFRED	71481	320.2	73.5	0.4	0.9	1.0	0.9	NA		NA		NA		NA	
USRN14840	NY:ALFRED	71481	341.5	90.1	0.2	0.7	0.1	0.4	NA		NA		NA		NA	
USRN15218	NY:AMAGANSETT	73081	87.0	94.8	0.1	0.2	0.6	0.8	NA		NA		NA		NA	
USRN14646	NY:AURORA	71381	1.1	89.8	0.5	0.7	2.8	1.0	NA		NA		NA		NA	
USRN14648	NY:BALDWINSVILLE	71381	437.7	94.5	0.6	0.8	1.7	1.0	NA		NA		NA		NA	
USRN14649	NY:BATH	71481	393.8	76.2	0.5	0.7	2.0	1.0	NA		NA		NA		NA	
USRN15050X	NY:BAYVILLE	72781	73.4	69.8	0.4	0.3	0.6	0.6	NA		NA		NA		NA	
USRN15050	NY:BAYVILLE	72781	-5.4	58.4	0.3	0.2	-0.1	2.7	NA		NA		NA		NA	
USRN13116	NY:BETHEL	51481	504.7	95.6	0.3	0.3	1.4	0.8	NA		NA		NA		NA	
USRN15221	NY:BETHPAGE	73181	120.5	81.9	0.3	0.3	1.7	0.8	NA		NA		NA		NA	
USRN13122	NY:BREWSTER	51381	317.7	99.0	0.8	0.7	3.9	1.2	NA		NA		NA		NA	
USRN15226	NY:BROOKHAVEN	73181	120.9	82.1	0.2	0.2	1.0	0.8	NA		NA		NA		NA	
USRN15122	NY:BROOKHAVEN	73081	81.9	100.2	0.1	0.3	0.6	0.8	NA		NA		NA		NA	
USRN15098	NY:CARLE PLACE	72881	95.4	74.9	0.0	0.3	0.7	0.9	NA		NA		NA		NA	
USRN13059	NY:CHESTER	51281	-12.6	68.7	0.3	0.4	2.6	1.0	NA		NA		NA		NA	
USRN12996	NY:CLIFTON PARK	51181	16.3	61.4	0.1	0.4	0.3	0.8	NA		NA		NA		NA	
USRN12995	NY:CLIFTON PARK	51181	92.1	62.3	-0.2	2.0	14.7	5.2	NA		NA		NA		NA	
USRN12990	NY:CLIFTON PARK	51181	6.6	61.0	0.3	0.5	1.6	1.1	NA		NA		NA		NA	
USRN14651	NY:CLINTON	71381	306.0	76.3	0.3	0.8	5.9	1.3	NA		NA		NA		NA	
USRN14655	NY:CORNING	71481	302.5	75.5	0.2	0.6	2.2	1.0	NA		NA		NA		NA	
USRN13023	NY:CORNWALL	51281	10.2	60.9	0.0	0.0	1.8	1.0	NA		NA		NA		NA	
USRN14608	NY:CORTLAND	71381	515.8	77.4	0.3	0.6	1.7	0.9	NA		NA		NA		NA	
USRN13130	NY:CROTON ON THE H	51381	NA		0.1	0.5	1.8	1.0	NA		NA		NA		NA	
USRN13130X	NY:CROTON ON THE H	51381	395.4	100.8	0.3	0.4	2.1	0.9	NA		NA		NA		NA	
USRN15775	NY:DANNEMORA	81981	-32.2	73.8	0.0	0.2	1.3	0.8	NA		NA		NA		NA	
USRN15225	NY:EAST FISHKILL	8 181	558.4	108.3	0.5	1.5	3.1	3.9	NA		NA		NA		NA	
USRN15105	NY:EAST MEADOW	72981	62.9	60.4	0.4	0.3	0.9	0.7	NA		NA		NA		NA	
USRN15119	NY:EAST MEADOW	72981	73.6	117.6	0.1	0.2	1.5	0.9	NA		NA		NA		NA	
USRN15125	NY:EAST MEADOW	72981	31.7	119.0	0.1	0.2	1.1	0.8	NA		NA		NA		NA	
USRN15171	NY:EAST MEADOW	72981	123.7	118.7	0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN15174	NY:EAST MEADOW	72981	89.8	120.7	0.1	0.2	0.1	0.5	NA		NA		NA		NA	
USRN15316	NY:ENDICOTT	71481	139.7	74.0	0.7	0.6	1.3	0.9	NA		NA		NA		NA	
USRN14652	NY:FAIRHAVEN	71381	333.1	91.6	0.3	0.5	1.0	0.9	NA		NA		NA		NA	
USRN13118	NY:FALLSBURGH	51481	647.0	96.6	1.4	0.7	1.0	0.7	NA		NA		NA		NA	
USRN15101	NY:FARMINGDALE	72881	90.7	71.5	0.1	0.2	0.6	0.8	NA		NA		NA		NA	
USRN13123	NY:FISHKILL	51381	197.3	98.6	0.5	0.7	0.7	0.9	NA		NA		NA		NA	
USRN13119	NY:FISHKILL	51381	194.4	62.2	0.2	0.6	0.5	0.8	NA		NA		NA		NA	
USRN14696	NY:FRANKFORT	71381	359.0	79.0	0.4	0.7	3.1	1.2	NA		NA		NA		NA	
USRN15126	NY:FRANKLIN SQUARE	72981	64.1	123.7	-0.1	0.2	1.4	0.9	NA		NA		NA		NA	
USRN15110	NY:FREEPORT	72981	-50.1	89.5	0.4	0.3	0.8	0.7	NA		NA		NA		NA	
USRN15110X	NY:FREEPORT	72981	45.3	61.1	0.4	0.3	0.9	0.7	NA		NA		NA		NA	
USRN14645	NY:FULTON	71381	264.9	90.6	0.2	0.7	1.6	1.1	NA		NA		NA		NA	
USRN15096	NY:GARDEN CITY	72881	227.1	75.9	0.8	0.7	2.0	0.9	NA		NA		NA		NA	
USRN15097	NY:GARDEN CITY	72881	158.1	74.3	0.4	0.3	1.7	0.9	NA		NA		NA		NA	
USRN15054	NY:GLEN COVE	72781	74.8	71.8	0.9	0.5	0.8	0.7	NA		NA		NA		NA	
USRN15051	NY:GREAT NECK	72781	104.2	76.5	0.6	0.6	2.1	1.0	NA		NA		NA		NA	
USRN15173	NY:HEMPSTEAD	72981	16.2	121.4	0.3	0.5	3.1	1.1	NA		NA		NA		NA	
USRN15169	NY:HEMPSTEAD	72981	38.1	120.7	0.1	0.3	1.4	0.9	NA		NA		NA		NA	
USRN14835	NY:HERKIMER	71381	-2.6	72.7	0.2	0.3	2.1	0.9	NA		NA		NA		NA	
USRN15102	NY:HICKSVILLE	72881	60.5	75.8	0.7	0.4	0.3	0.4	NA		NA		NA		NA	
USRN13060	NY:HIGHLAND FALLS	51281	1.0	76.8	0.0	0.3	2.6	1.1	NA		NA		NA		NA	

Table B.20 Natural radioactivity in public groundwater systems-New York (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13060X	NY:HIGHLAND FALLS	51281	-49.9	67.4	0.0	0.3	3.2	1.0	NA		NA		NA		NA	
USRN15320	NY:HILLCREST	71481	NA		0.8	0.7	1.5	0.9	NA		NA		NA		NA	
USRN15320X	NY:HILLCREST	71481	NA		0.8	0.7	1.1	0.7	NA		NA		NA		NA	
USRN14610X	NY:HOMER	71381	364.9	77.2	0.4	0.5	0.8	0.2	NA		NA		NA		NA	
USRN14610	NY:HOMER	71381	389.3	82.4	0.3	0.5	1.0	0.8	NA		NA		NA		NA	
USRN13126	NY:HOOSICK FALLS	51481	403.7	92.1	0.4	0.4	0.9	0.9	NA		NA		NA		NA	
USRN15315	NY:HORSEHEADS	71481	473.1	78.0	0.0	0.0	1.9	1.0	NA		NA		NA		NA	
USRN13120X	NY:HUDSON	51381	-14.3	58.7	0.3	0.3	2.0	0.9	NA		NA		NA		NA	
USRN15777	NY:HUDSON	81281	-40.7	144.4	0.6	0.8	1.5	1.0	NA		NA		NA		NA	
USRN13120	NY:HUDSON	51381	13.9	47.5	0.2	0.4	1.6	0.9	NA		NA		NA		NA	
USRN15168	NY:HUNTINGTON	73081	107.6	102.5	-0.3	0.2	1.5	0.9	NA		NA		NA		NA	
USRN15111	NY:HUNTINGTON	72881	122.4	80.3	0.0	0.2	0.8	0.8	NA		NA		NA		NA	
USRN15103	NY:HUNTINGTON	72881	26.1	75.9	0.2	0.2	0.8	0.8	NA		NA		NA		NA	
USRN15107	NY:HUNTINGTON	72881	117.2	79.1	-0.1	0.3	0.7	0.9	NA		NA		NA		NA	
USRN15100X	NY:ISLIP	72981	54.0	63.7	0.4	0.3	1.1	0.8	NA		NA		NA		NA	
USRN15220X	NY:ISLIP	73181	90.0	78.5	0.1	0.2	0.9	0.8	NA		NA		NA		NA	
USRN15224	NY:ISLIP	73181	125.8	79.8	0.1	0.2	0.5	0.8	NA		NA		NA		NA	
USRN15222	NY:ISLIP	73181	13.1	77.6	0.2	0.2	0.6	0.7	NA		NA		NA		NA	
USRN15257	NY:ISLIP	73181	-11.7	74.2	0.1	0.2	1.1	0.8	NA		NA		NA		NA	
USRN15220	NY:ISLIP	73181	189.0	98.4	0.2	0.3	1.8	0.9	NA		NA		NA		NA	
USRN15100	NY:ISLIP	72981	13.4	95.5	0.2	0.3	0.9	0.8	NA		NA		NA		NA	
USRN15258	NY:JAMAICA	8 181	107.5	104.0	0.2	0.2	1.0	0.7	NA		NA		NA		NA	
USRN14837	NY:JAMESTOWN	71481	166.3	75.3	0.7	0.8	0.8	1.0	NA		NA		NA		NA	
USRN15314	NY:JOHNSON CITY	71481	478.0	76.5	-0.4	0.7	2.7	1.2	NA		NA		NA		NA	
USRN15123	NY:LAKE GROVE	73081	90.6	103.5	0.1	0.2	1.7	0.9	NA		NA		NA		NA	
USRN15523	NY:LAKE SUCCESS	72781	167.3	78.0	0.0	0.3	0.7	0.8	NA		NA		NA		NA	
USRN13128	NY:LIBERTY	51481	791.5	102.2	0.1	0.4	2.1	0.9	0.1	0.0	NA		0.0	0.0	0.0	0.0
USRN14712	NY:LITTLE FALLS	71381	16.2	71.2	0.2	0.4	0.9	0.9	NA		NA		NA		NA	
USRN15046	NY:LOCUST VALLEY	72781	312.9	74.6	0.3	0.3	0.5	0.7	NA		NA		NA		NA	
USRN15104	NY:LONG BEACH	72981	34.6	59.1	0.1	0.3	1.5	0.9	NA		NA		NA		NA	
USRN15521	NY:LYNBROOK	72981	120.3	60.5	0.3	0.3	0.9	0.8	NA		NA		NA		NA	
USRN12997	NY:MALTA	51181	109.8	62.5	0.3	0.5	0.1	0.5	NA		NA		NA		NA	
USRN15044	NY:MANHASSET	72781	67.9	74.7	0.2	0.2	1.3	0.9	NA		NA		NA		NA	
USRN15099	NY:MASSAPEQUA	72981	125.6	63.5	0.0	0.2	0.9	0.8	NA		NA		NA		NA	
USRN15522	NY:MERRICK	72981	78.4	62.7	0.1	0.2	1.0	0.8	NA		NA		NA		NA	
USRN13125	NY:MIDDLETOWN	51381	24.4	93.9	0.2	0.4	3.0	1.0	NA		NA		NA		NA	
USRN15113	NY:MINEOLA	72881	289.7	78.3	0.3	0.5	0.8	0.8	NA		NA		NA		NA	
USRN14938	NY:MOHAWK	71381	443.0	79.5	0.4	0.9	3.1	1.3	NA		NA		NA		NA	
USRN13061	NY:MONROE	51281	-17.5	68.2	0.3	0.3	1.3	0.8	NA		NA		NA		NA	
USRN13025	NY:MONTGOMERY	51281	332.1	66.3	0.0	0.0	1.0	0.9	NA		NA		NA		NA	
USRN14609	NY:MORRISVILLE	71381	323.9	75.8	0.4	1.9	5.0	4.6	NA		NA		NA		NA	
USRN15219	NY:MOUNT PLEASANT	8 181	193.1	103.3	0.3	0.7	4.8	1.3	NA		NA		NA		NA	
USRN13024	NY:NEWBURGH	51281	-43.1	58.8	0.5	0.5	1.3	0.8	NA		NA		NA		NA	
USRN13022	NY:NEWBURGH	51281	7.9	60.3	-0.2	0.5	2.5	10.4	NA		NA		NA		NA	
USRN14654	NY:NIAGARA FALLS	71481	-7.7	80.7	0.2	0.4	1.2	0.9	NA		NA		NA		NA	
USRN13129	NY:NISKAYUNA	51581	376.3	77.1	0.2	0.5	2.0	0.9	NA		NA		NA		NA	
USRN15525	NY:OAKDALE	73181	62.4	76.8	0.2	0.2	0.8	0.8	NA		NA		NA		NA	
USRN15319	NY:OWEGO	71481	419.1	75.4	0.5	0.6	1.4	0.9	NA		NA		NA		NA	
USRN15045	NY:OYSTER BAY	72781	314.2	73.8	0.0	0.2	1.6	0.9	NA		NA		NA		NA	
USRN15114	NY:PLAINVIEW	72881	131.8	77.7	0.5	0.3	1.9	0.9	NA		NA		NA		NA	
USRN13117	NY:PORT JERVIS	51481	101.8	89.1	0.6	0.5	1.0	0.8	NA		NA		NA		NA	
USRN15049	NY:PORT WASHINGTON	72781	4.3	72.4	0.8	0.5	2.1	0.9	NA		NA		NA		NA	
USRN15048	NY:PORT WASHINGTON	72781	206.7	75.3	2.8	0.9	2.7	0.9	NA		NA		NA		NA	

Table B.20 Natural radioactivity in public groundwater systems-New York (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13127	NY:POUGHKEEPSIE	51381	33.9	59.1	0.2	0.5	1.1	0.8	NA		NA		NA		NA	
USRN15172	NY:RIVERHEAD	73081	118.6	100.1	0.1	0.2	0.6	0.8	NA		NA		NA		NA	
USRN15109	NY:ROCKVILLE CENTE	72981	22.1	60.4	0.4	0.3	1.3	0.8	NA		NA		NA		NA	
USRN15053	NY:ROSLYN	72781	46.6	71.1	1.3	0.4	0.5	0.4	NA		NA		NA		NA	
USRN15047	NY:ROSLYN HEIGHTS	72781	22.8	71.9	2.3	0.6	0.5	0.3	NA		NA		NA		NA	
USRN12934	NY:ROTTERDAM	5 781	267.1	89.0	1.1	0.6	1.0	0.7	NA		NA		NA		NA	
USRN13149	NY:SCHENECTADY	51581	361.8	77.7	0.5	0.5	1.8	0.9	NA		NA		NA		NA	
USRN12935	NY:SCOTIA	5 781	126.7	85.9	0.4	0.6	1.3	0.9	NA		NA		NA		NA	
USRN12936	NY:SCOTIA	5 781	191.4	86.6	-0.1	0.4	1.2	0.9	NA		NA		NA		NA	
USRN15121	NY:SELDON	73081	119.2	102.6	0.2	0.3	2.4	1.0	NA		NA		NA		NA	
USRN15124	NY:SHOREHAM	73081	150.0	100.4	0.1	0.3	1.8	0.9	NA		NA		NA		NA	
USRN15170	NY:SMITHTOWN	73081	8.1	137.2	0.0	0.0	1.3	0.9	NA		NA		NA		NA	
USRN15170X	NY:SMITHTOWN	73081	100.0	104.0	0.0	0.2	1.8	1.0	NA		NA		NA		NA	
USRN15216	NY:SOUTH FARMINGDA	73181	86.4	82.7	-0.1	0.2	0.1	1.2	NA		NA		NA		NA	
USRN15223	NY:SOUTHHAMPTON	73081	157.4	94.1	0.2	0.3	0.9	0.8	NA		NA		NA		NA	
USRN15120X	NY:SOUTHHOLD	73081	16.2	96.0	0.2	0.6	2.9	1.1	NA		NA		NA		NA	
USRN15217	NY:SOUTHHOLD	73081	86.7	92.0	-0.1	0.2	1.5	0.9	NA		NA		NA		NA	
USRN15120	NY:SOUTHHOLD	73081	8.9	127.7	0.2	0.6	2.4	1.0	NA		NA		NA		NA	
USRN14836	NY:SPRINGVILLE	71481	287.5	77.6	0.3	0.6	2.0	1.1	NA		NA		NA		NA	
USRN15052	NY:SUFFERN	72781	192.5	79.7	0.6	0.7	1.8	1.0	NA		NA		NA		NA	
USRN15524	NY:SYOSSET	72881	93.6	63.3	0.1	0.3	0.5	0.8	NA		NA		NA		NA	
USRN13026	NY:ULSTER	51281	-11.5	60.1	0.4	0.7	0.5	0.7	NA		NA		NA		NA	
USRN15317	NY:VESTAL	71481	235.8	70.7	0.3	0.4	1.0	0.8	NA		NA		NA		NA	
USRN15318	NY:VESTAL	71481	577.8	83.7	0.3	0.5	1.0	0.8	NA		NA		NA		NA	
USRN12937	NY:VOORHEESVILLE	5 681	300.5	108.1	0.6	0.8	1.8	1.1	NA		NA		NA		NA	
USRN13021	NY:WALLKILL	51281	178.6	64.3	0.1	0.3	0.9	1.0	NA		NA		NA		NA	
USRN15776	NY:WALTON	81481	-55.4	104.3	0.4	0.5	2.7	1.1	NA		NA		NA		NA	
USRN13121	NY:WAPPINGERS FALL	51381	496.0	66.9	0.2	0.4	1.1	0.8	NA		NA		NA		NA	
USRN13124	NY:WAPPINGERS FALL	51381	188.1	61.8	0.3	0.4	0.6	0.9	NA		NA		NA		NA	
USRN14647	NY:WARSAW	71481	-26.5	77.8	0.3	0.5	1.9	0.9	NA		NA		NA		NA	
USRN13062	NY:WARWICK	51281	22.4	69.2	0.7	0.5	2.2	1.1	NA		NA		NA		NA	
USRN15321	NY:WATERTOWN	71481	NA		0.5	0.5	2.8	1.0	NA		NA		NA		NA	
USRN15313	NY:WAVERLY	71481	294.5	77.8	0.4	0.6	1.5	1.0	NA		NA		NA		NA	
USRN14650X	NY:WEBSTER	71381	-21.1	87.6	0.6	1.8	4.2	4.6	NA		NA		NA		NA	
USRN14650	NY:WEBSTER	71381	44.1	105.3	1.6	1.7	3.9	3.8	NA		NA		NA		NA	
USRN15108	NY:WESTBURY	72881	81.9	75.3	0.1	0.2	0.7	0.8	NA		NA		NA		NA	
USRN15112	NY:WILLISTON PARK	72881	109.7	147.1	0.1	0.4	2.4	1.0	NA		NA		NA		NA	
USRN15106	NY:WOODBURY	72881	102.5	80.4	0.0	0.2	1.9	0.9	NA		NA		NA		NA	
USRN13027	NY:WOODSTOCK	51281	728.1	74.7	0.2	0.3	0.4	0.7	NA		NA		NA		NA	

Table 3.21 Natural radioactivity in public water systems-North Carolina

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN17466	NC:ABERDEEN	111081	444.6	142.3	1.1	0.4	0.7	0.5	NA		NA		NA		NA	
USRN17243*	NC:ANGIER	102881	15.3	72.9	0.3	0.5	5.2	1.2	NA		NA		NA		NA	
USRN17318	NC:ATLANTIC BEACH	103081	127.8	98.5	0.5	0.9	3.5	1.5	NA		NA		NA		NA	
USRN17241	NC:ATLANTIC BEACH	103081	15.7	74.5	0.2	1.0	1.8	2.1	NA		NA		NA		NA	
USRN20436	NC:AURORA	11982	73.3	119.1	0.1	0.9	4.4	1.0	NA		NA		NA		NA	
USRN17469	NC:AVLANDER	111081	106.5	66.6	0.8	0.9	8.0	2.1	NA		NA		NA		NA	
USRN17432	NC:AYDEN	11 681	94.8	129.2	0.5	0.7	2.3	1.4	NA		NA		NA		NA	
USRN17110X*	NC:BANNER ELK	102381	11.8	80.9	0.1	0.3	2.7	1.0	NA		NA		NA		NA	
USRN17110*	NC:BANNER ELK	102381	4.5	90.8	0.1	0.3	2.1	0.9	NA		NA		NA		NA	
USRN17259	NC:BEAUFORT	103081	-16.2	75.8	0.1	1.0	8.5	2.7	NA		NA		NA		NA	
USRN17892	NC:BELHAVEN	112181	71.5	133.5	-0.2	1.6	3.5	2.3	NA		NA		NA		NA	
USRN17252	NC:BENSON	102881	131.5	106.3	0.6	0.6	4.5	1.3	NA		NA		NA		NA	
USRN17438	NC:BETHEL	11 681	47.3	137.2	0.7	1.0	7.8	2.7	NA		NA		NA		NA	
USRN17676	NC:BEULAVILLE	111381	50.2	123.8	0.4	0.6	6.5	1.4	NA		NA		NA		NA	
USRN17785	NC:BLADENBORO	111981	66.6	93.4	0.3	0.3	1.4	0.8	NA		NA		NA		NA	
USRN17111*	NC:BOONE	102381	0.0	81.8	0.1	0.3	2.3	1.0	NA		NA		NA		NA	
USRN17346	NC:BOONEVILLE	11 381	2021.0	101.1	1.1	0.5	1.6	0.8	NA		NA		NA		NA	
USRN20875	NC:BUNN	21082	10510.0	105.1	8.9	1.3	8.0	1.1	2.7	0.1	0.2	0.2	11.5	1.4	5.3	0.7
USRN16945	NC:BURGAW	101681	50.7	72.8	0.6	0.9	5.3	1.3	NA		NA		NA		NA	
USRN17890X	NC:BUXTON	112381	-25.4	87.3	3.0	1.7	4.0	2.0	NA		NA		NA		NA	
USRN17890	NC:BUXTON	112381	59.0	115.8	0.3	1.1	1.7	2.5	NA		NA		NA		NA	
USRN17787	NC:CAROLINA BEACH	111881	-1.1	106.1	-0.1	0.9	13.6	3.0	NA		NA		NA		NA	
USRN17476	NC:CARTHAGE	111081	34.7	134.7	0.1	0.3	1.1	0.8	NA		NA		NA		NA	
USRN20407	NC:CARY	11882	4085.5	122.6	1.0	0.4	1.6	0.8	NA		NA		NA		NA	
USRN17405	NC:CASWELL BEACH	11 481	10.8	28.7	0.0	0.4	2.1	1.0	NA		NA		NA		NA	
USRN17893	NC:CHADBOURN	111981	1.1	91.3	0.1	0.4	6.0	1.2	NA		NA		NA		NA	
USRN18561	NC:CHINA GROVE	121581	528.2	78.9	5.4	1.6	4.9	1.6	NA		NA		NA		NA	
USRN17168	NC:CLAREMONT	102781	-2.8	58.7	0.1	0.3	1.5	0.8	NA		NA		NA		NA	
USRN17898	NC:CLARKTON	111981	-16.0	64.3	0.3	0.4	3.1	1.0	NA		NA		NA		NA	
USRN17258	NC:CLAYTON	102981	507.1	93.7	0.4	0.5	1.6	0.5	NA		NA		NA		NA	
USRN17794	NC:CLINTON	111981	58.0	89.5	0.3	0.4	6.6	1.3	NA		NA		NA		NA	
USRN17251*	NC:COATS	102881	45.1	104.2	0.1	0.4	4.6	1.1	NA		NA		NA		NA	
USRN17758	NC:COLERAIN	111781	132.6	76.1	-0.3	0.8	7.3	2.9	NA		NA		NA		NA	
USRN17896	NC:COLUMBIA	112481	8.8	73.6	0.0	0.0	10.0	5.4	NA		NA		NA		NA	
USRN17172*	NC:COLUMBUS	102781	16.1	58.3	0.0	0.2	1.0	0.8	NA		NA		NA		NA	
USRN17926	NC:CONWAY	112581	375.6	105.5	0.2	0.4	5.1	1.2	NA		NA		NA		NA	
USRN17260	NC:CULLOWHEE	102881	-4.9	160.1	0.0	0.2	1.0	0.9	NA		NA		NA		NA	
USRN17260X	NC:CULLOWHEE	102881	34.5	106.8	0.1	0.2	1.7	1.0	NA		NA		NA		NA	
USRN17479*	NC:CUMNOCK	111081	-0.9	68.7	0.1	0.3	3.4	1.0	NA		NA		NA		NA	
USRN17683	NC:DEEP RUN	111381	-42.8	121.7	0.0	0.2	1.4	0.9	NA		NA		NA		NA	
USRN17139*	NC:DREXEL	102281	12.0	89.6	0.0	0.2	1.2	1.0	NA		NA		NA		NA	
USRN17345	NC:EAST BEND	11 381	312.1	77.9	0.3	0.3	3.5	1.0	NA		NA		NA		NA	
USRN18070	NC:EDENTON	12 381	59.2	103.6	0.0	0.0	7.1	4.7	NA		NA		NA		NA	
USRN18070X	NC:EDENTON	12 381	61.5	86.0	-0.6	2.6	9.3	5.5	NA		NA		NA		NA	
USRN18067	NC:ELIZABETH CITY	12 481	26.9	74.9	0.3	1.5	6.1	4.2	NA		NA		NA		NA	
USRN17793	NC:ELIZABETHTOWN	111981	-44.1	91.0	0.3	0.8	4.3	1.7	NA		NA		NA		NA	
USRN17247	NC:ELM CITY	102981	125.2	86.8	0.2	0.7	2.4	1.2	NA		NA		NA		NA	
USRN17818	NC:FAIR BLUFF	112081	-27.2	79.8	1.0	0.8	4.3	1.3	NA		NA		NA		NA	
USRN17819	NC:FAIRMOUNT	112081	-51.2	78.7	0.0	0.3	3.0	1.1	NA		NA		NA		NA	
USRN17430X	NC:FARMVILLE	11 681	203.8	130.6	0.1	0.5	5.3	1.4	NA		NA		NA		NA	
USRN17430	NC:FARMVILLE	11 681	301.3	149.1	0.4	0.7	5.3	1.4	NA		NA		NA		NA	
USRN16947	NC:FAYETTEVILLE	101481	508.4	114.3	2.1	1.5	3.4	3.0	NA		NA		NA		NA	
USRN17750	NC:FAYETTEVILLE	111781	230.4	92.0	0.9	0.4	1.2	0.7	NA		NA		NA		NA	

Table B.21 Natural radioactivity in public water systems-North Carolina (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN17753	NC:FAYETTEVILLE	111781	275.6	81.1	3.2	0.6	3.8	0.8	4.3	0.1	4.4	1.0	0.2	0.0	0.2	0.0
USRN17752	NC:FAYETTEVILLE	111781	508.5	85.2	5.6	0.9	1.6	0.4	4.1	0.1	1.2	0.9	0.1	0.0	0.1	0.0
USRN17750X	NC:FAYETTEVILLE	111781	207.1	81.7	0.6	0.3	1.9	0.9	NA		NA		NA		NA	
USRN17748	NC:FAYETTEVILLE	111781	470.4	87.0	3.1	0.7	2.9	0.8	4.1	0.1	1.7	0.8	0.0	0.0	0.0	0.0
USRN17696	NC:FAYETTEVILLE	111781	659.5	88.9	1.1	0.6	2.2	0.7	NA		NA		NA		NA	
USRN17690	NC:FAYETTEVILLE	111781	344.4	95.5	3.7	0.7	3.5	0.8	NA		6.9	1.0	NA		NA	
USRN17690X	NC:FAYETTEVILLE	111781	371.1	87.1	4.3	0.7	3.9	0.8	3.8	0.1	NA		0.1	0.0	0.0	0.0
USRN17694	NC:FAYETTEVILLE	111781	298.6	85.7	1.9	0.6	4.3	1.0	NA		NA		NA		NA	
USRN17751	NC:FAYETTEVILLE	111781	195.3	82.2	3.8	0.8	8.6	1.2	4.8	0.1	11.9	1.3	0.1	0.0	0.1	0.0
USRN17754	NC:FAYETTEVILLE	111781	846.2	93.2	2.9	0.6	2.6	0.7	NA		NA		NA		NA	
USRN20870X	NC:FOUR OAKS	21082	163.6	61.3	1.0	0.5	2.9	0.9	NA		NA		NA		NA	
USRN20870	NC:FOUR OAKS	21082	104.8	63.3	1.1	0.6	2.5	0.9	NA		NA		NA		NA	
USRN17242	NC:FREMONT	102981	45.5	84.7	0.8	1.6	11.3	3.0	NA		NA		NA		NA	
USRN17256*	NC:FUQUAY	102881	235.8	107.6	0.1	0.3	1.5	0.8	NA		NA		NA		NA	
USRN17410	NC:GARYSBURG	11 581	153.9	102.1	0.1	0.3	1.8	0.9	NA		NA		NA		NA	
USRN17410X	NC:GARYSBURG	11 581	156.9	89.5	0.0	0.0	1.1	0.9	NA		NA		NA		NA	
USRN17409	NC:GASTON	11 581	1540.5	107.8	3.7	1.0	5.7	1.1	1.4	0.0	NA		0.7	0.1	0.3	0.1
USRN17680X	NC:GOLDSBORO	111381	11.8	123.1	0.2	0.3	1.7	0.8	NA		NA		NA		NA	
USRN17684	NC:GOLDSBORO	111381	-152.7	118.9	0.2	0.3	3.3	1.0	NA		NA		NA		NA	
USRN17680	NC:GOLDSBORO	111381	117.5	137.7	0.0	0.3	2.8	1.1	NA		NA		NA		NA	
USRN17344	NC:GRANDVIEW	11 381	533.3	79.7	0.9	0.6	1.7	0.8	NA		NA		NA		NA	
USRN17889	NC:GRANDY	112381	140.8	93.0	0.1	0.6	6.7	1.7	NA		NA		NA		NA	
USRN17137*	NC:GRANITE FALLS	102281	22.4	86.9	0.0	0.2	2.5	1.1	NA		NA		NA		NA	
USRN17435	NC:GRIFTON	11 681	35.0	128.9	0.7	0.8	3.0	1.2	NA		NA		NA		NA	
USRN17276	NC:HARKERS ISLAND	103081	-6.1	76.1	0.1	0.7	6.7	2.6	NA		NA		NA		NA	
USRN17348	NC:HARMONY	11 381	1241.5	86.9	0.4	0.4	1.9	0.9	NA		NA		NA		NA	
USRN17319	NC:HAVELOCK	102981	87.1	87.8	0.2	0.7	1.0	1.3	NA		NA		NA		NA	
USRN18069	NC:HERTFORD	12 381	100.7	88.6	0.6	2.5	3.5	4.0	NA		NA		NA		NA	
USRN18068	NC:HERTFORD	12 381	140.8	90.5	-0.1	0.6	0.8	1.0	NA		NA		NA		NA	
USRN18568	NC:HIGH SHOALS	121781	21.3	84.2	0.2	0.4	2.9	1.1	NA		NA		NA		NA	
USRN17136*	NC:HILDEBRAN	102281	-22.9	89.0	0.2	0.3	1.3	0.8	NA		NA		NA		NA	
USRN17557	NC:HOBGOOD	111081	173.9	136.5	0.6	0.6	3.8	1.3	NA		NA		NA		NA	
USRN17945	NC:JACKSON	112581	516.2	108.2	0.1	0.7	7.9	2.0	NA		NA		NA		NA	
USRN17681	NC:JACKSONVILLE	111381	527.0	131.5	2.7	2.9	11.3	4.8	NA		NA		NA		NA	
USRN17679	NC:JACKSONVILLE	111381	128.4	125.5	0.1	1.0	8.8	2.7	NA		NA		NA		NA	
USRN17682	NC:JACKSONVILLE	111381	88.6	125.3	0.0	0.0	0.9	0.9	NA		NA		NA		NA	
USRN18567*	NC:KANNAPOLIS	121581	17.7	121.1	0.1	0.3	1.9	0.9	NA		NA		NA		NA	
USRN17791	NC:KINANSVILLE	111381	26.6	123.3	0.2	0.4	1.7	0.9	NA		NA		NA		NA	
USRN17279	NC:KINTON	103181	128.9	83.6	0.0	0.3	8.0	8.5	NA		NA		NA		NA	
USRN17277	NC:KINTON	103181	34.4	81.9	0.4	0.5	5.1	1.2	NA		NA		NA		NA	
USRN17788	NC:KURE BEACH	111881	5.0	107.3	-0.2	0.8	12.3	2.9	NA		NA		NA		NA	
USRN17678	NC:LA GRANGE	111381	-51.7	121.1	0.2	0.6	5.4	1.2	NA		NA		NA		NA	
USRN17677	NC:LA GRANGE	111381	4.3	123.2	0.1	0.2	4.6	1.1	NA		NA		NA		NA	
USRN17170	NC:LAKE LURE	102781	10585.0	105.9	3.7	0.8	0.3	0.1	0.2	0.0	NA		0.8	0.1	0.6	0.1
USRN17170X	NC:LAKE LURE	102781	10640.0	106.4	4.1	0.8	0.6	0.3	NA		NA		NA		NA	
USRN17816	NC:LAKE WACCAMAW	111981	11.7	91.9	5.6	1.2	18.3	1.8	0.1	0.0	NA		0.0	0.0	0.0	0.0
USRN17689	NC:LAUREL HILLS	111481	343.4	72.7	0.3	0.3	0.8	0.7	NA		NA		NA		NA	
USRN17695	NC:LIBERTY	111781	729.3	84.9	0.5	0.4	0.7	0.7	NA		NA		NA		NA	
USRN18563*	NC:LINCOLNTON	121581	25.6	70.0	0.0	0.0	0.7	0.8	NA		NA		NA		NA	
USRN17134	NC:LINVILLE	102381	1887.0	113.2	-0.1	0.2	1.1	0.8	NA		NA		NA		NA	
USRN17408	NC:LITTLETON	11 581	1401.0	104.6	0.4	0.7	2.1	0.9	NA		NA		NA		NA	
USRN16686	NC:LONG BEACH	10 681	88.2	73.8	-0.2	0.3	1.7	1.0	NA		NA		NA		NA	
USRN16948*	NC:LOUISBURG	101581	77.4	88.5	0.2	0.4	4.2	1.2	NA		NA		NA		NA	

Table B.21 Natural radioactivity in public water systems-North Carolina (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN20871	NC:LUCAMA	21082	493.4	68.6	2.0	1.0	2.8	1.2	NA		NA		NA		NA	
USRN17815	NC:LUMBERTON	112081	43.5	82.2	-0.1	0.5	1.9	1.0	NA		NA		NA		NA	
USRN17477*	NC:LYLESVILLE	111081	10.1	47.9	0.0	0.3	4.1	1.1	NA		NA		NA		NA	
USRN17437	NC:MACCLESFIELD	11 681	244.6	141.0	0.2	0.3	3.1	1.0	NA		NA		NA		NA	
USRN17897	NC:MANTEO	112481	80.7	79.4	-1.1	1.2	6.1	2.8	NA		NA		NA		NA	
USRN17691	NC:MAXTON	111481	42.8	66.3	1.3	0.4	3.1	1.0	NA		NA		NA		NA	
USRN17315	NC:MAYSVILLE	103181	131.5	102.9	0.4	1.0	1.9	2.3	NA		NA		NA		NA	
USRN18560	NC:MCADENVILLE	121681	31.6	64.0	0.1	0.3	2.4	0.9	NA		NA		NA		NA	
USRN18560X	NC:MCADENVILLE	121681	72.2	61.3	0.1	0.2	3.0	1.0	NA		NA		NA		NA	
USRN20876	NC:MICRO	21082	1140.0	73.7	1.4	0.6	1.1	0.7	NA		NA		NA		NA	
USRN17269	NC:MIDDLESEX	102981	1570.0	109.9	0.1	0.3	1.9	0.9	NA		NA		NA		NA	
USRN17478	NC:MONCURE	111181	131.4	59.2	0.7	0.9	2.3	2.0	NA		NA		NA		NA	
USRN17255	NC:MOREHEAD CITY	103081	117.2	77.9	0.6	1.1	4.8	2.4	NA		NA		NA		NA	
USRN17135	NC:MORGANTON	102381	1278.5	95.6	0.0	0.2	2.2	0.9	NA		NA		NA		NA	
USRN17133	NC:MORGANTON	102381	2168.5	108.6	0.4	0.3	1.7	0.8	NA		NA		NA		NA	
USRN20811	NC:MT. OLIVE	2 682	114.6	88.8	0.1	0.3	1.7	0.9	NA		NA		NA		NA	
USRN20812	NC:MT. OLIVE	2 682	120.3	88.8	0.0	0.3	1.8	0.9	NA		NA		NA		NA	
USRN17937	NC:MURFREESBORO	112581	316.6	106.1	0.1	0.7	2.2	1.7	NA		NA		NA		NA	
USRN17895	NC:NAGS HEAD	112381	-80.5	85.9	0.2	0.3	1.7	0.9	NA		NA		NA		NA	
USRN17246	NC:NASHVILLE	102981	860.7	98.9	0.8	0.4	1.4	0.5	NA		NA		NA		NA	
USRN17280X	NC:NEW BERN	103181	65.1	82.5	0.5	0.9	5.2	2.6	NA		NA		NA		NA	
USRN17280	NC:NEW BERN	103181	111.6	100.6	0.1	0.9	4.9	2.2	NA		NA		NA		NA	
USRN17317	NC:NEWPORT	102981	181.3	89.6	0.4	0.7	1.2	1.5	NA		NA		NA		NA	
USRN17407*	NC:NORLINA	11 581	146.8	90.6	0.2	0.3	1.4	0.9	NA		NA		NA		NA	
USRN17891*	NC:OAKBORO	112581	33.8	64.6	0.1	0.3	3.0	1.1	NA		NA		NA		NA	
USRN16685	NC:OCEAN ISLE	10 681	59.7	73.2	0.3	0.6	3.9	1.2	NA		NA		NA		NA	
USRN17240	NC:ORIENTAL	102981	-18.2	129.6	0.3	1.2	4.8	1.7	NA		NA		NA		NA	
USRN17240X	NC:ORIENTAL	102981	-13.9	85.9	0.2	1.2	6.4	1.8	NA		NA		NA		NA	
USRN17894	NC:PEMBROKE	112081	-36.9	80.3	0.1	0.2	1.1	0.8	NA		NA		NA		NA	
USRN17245	NC:PIKEVILLE	102981	2821.0	112.9	5.1	1.4	4.7	1.4	1.8	0.1	NA		0.4	0.1	0.1	0.0
USRN17244	NC:PINE LEVEL	102981	165.6	86.6	0.0	0.3	1.4	0.9	NA		NA		NA		NA	
USRN17470X	NC:PINEBLUFF	111081	180.2	137.0	0.2	0.5	1.6	0.7	NA		NA		NA		NA	
USRN17470	NC:PINEBLUFF	111081	176.0	160.2	1.5	0.4	2.1	0.8	NA		NA		NA		NA	
USRN17467	NC:PINEHURST	111081	336.5	139.5	5.0	0.8	8.4	1.2	4.6	0.0	4.5	1.0	0.1	0.0	0.0	0.0
USRN17431	NC:PINETOPS	11 881	103.2	97.6	0.6	0.5	3.4	1.1	NA		NA		NA		NA	
USRN17675	NC:PINK HILL	111381	65.3	124.6	0.0	0.3	9.9	1.6	NA		NA		NA		NA	
USRN18065	NC:PLYMOUTH	12 381	55.0	88.6	0.0	0.0	20.6	6.4	NA		0.9	1.0	NA		NA	
USRN17254	NC:PRINCETON	102981	1162.0	104.6	0.9	1.2	5.4	2.4	NA		NA		NA		NA	
USRN17627	NC:RAEFORD	111481	239.1	70.5	0.5	0.3	1.8	0.9	NA		NA		NA		NA	
USRN17692	NC:RED SPRINGS	111481	37.6	64.3	0.0	0.2	1.0	0.9	NA		NA		NA		NA	
USRN17556	NC:RICH SQUARE	111081	222.5	67.9	0.5	0.8	6.3	2.5	NA		NA		NA		NA	
USRN17685	NC:RICHLANDS	111381	124.3	125.9	-0.2	1.0	7.0	1.9	NA		NA		NA		NA	
USRN17480X	NC:ROBERSONVILLE	111081	137.4	67.9	0.6	1.8	10.8	4.8	NA		NA		NA		NA	
USRN17480	NC:ROBERSONVILLE	111081	168.3	76.9	0.3	2.7	11.5	5.1	NA		NA		NA		NA	
USRN18562	NC:ROCKWELL	121581	1139.0	85.2	0.5	0.4	1.4	0.8	NA		NA		NA		NA	
USRN20873	NC:ROLESVILLE	21082	7454.0	149.1	1.6	0.6	4.1	1.1	NA		NA		NA		NA	
USRN16974	NC:ROSE HILL	101681	99.2	97.5	0.2	0.5	0.4	0.7	NA		NA		NA		NA	
USRN17795	NC:ROSEBORO	111981	0.0	88.3	0.8	1.8	6.2	4.2	NA		NA		NA		NA	
USRN17821	NC:ROWLAND	112081	-13.2	80.6	0.8	0.4	2.0	0.8	NA		NA		NA		NA	
USRN17347	NC:RURAL HILL	11 381	290.2	75.4	0.5	0.6	3.4	1.0	NA		NA		NA		NA	
USRN17278	NC:SALTER PATH	103181	280.5	87.5	0.1	0.5	1.8	8.6	NA		NA		NA		NA	
USRN16946	NC:SANBURY	101581	196.9	85.6	2.3	2.4	12.4	5.3	NA		NA		NA		NA	
USRN17482	NC:SCOTLAND NECK	111081	157.1	67.6	0.1	0.5	3.0	1.2	NA		NA		NA		NA	

Table B.21 Natural radioactivity in public water systems-North Carolina (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN20874	NC:SELMA	21082	1045.5	73.2	1.1	0.8	2.2	1.1	NA		NA		NA		NA	
USRN17938	NC:SEVERN	112581	336.0	105.8	0.7	0.6	2.6	1.0	NA		NA		NA		NA	
USRN16684	NC:SHALLOTTE	10 681	108.1	73.5	0.4	0.3	1.0	0.8	NA		NA		NA		NA	
USRN17257*	NC:SHARPSBURG	102981	67.5	85.7	1.0	0.5	2.9	0.9	NA		NA		NA		NA	
USRN20872	NC:SIMS	21082	1254.0	81.1	0.4	0.4	1.7	0.8	NA		NA		NA		NA	
USRN17433	NC:SNOW HILL	11 681	112.1	129.2	0.4	0.7	7.2	2.1	NA		NA		NA		NA	
USRN18066	NC:SOUTH MILLS	12 481	26.7	77.7	0.5	1.6	6.7	4.1	NA		NA		NA		NA	
USRN17404	NC:SOUTHPORT	11 481	662.8	112.2	0.0	0.0	2.2	1.5	NA		NA		NA		NA	
USRN17108	NC:SPARTA	102281	1471.5	117.7	1.2	0.4	2.0	0.8	NA		NA		NA		NA	
USRN18559	NC:SPENCER MT.	121681	34.2	60.9	0.1	0.3	2.2	0.9	NA		NA		NA		NA	
USRN17253	NC:SPRING HOPE	102981	1444.0	108.2	0.3	0.4	1.2	0.8	NA		NA		NA		NA	
USRN17693	NC:SPRING LAKE	111781	91.5	77.8	1.3	0.5	3.8	1.1	NA		NA		NA		NA	
USRN17757	NC:SPRING LAKE	111781	73.6	78.4	1.5	0.5	2.6	0.8	NA		NA		NA		NA	
USRN18064	NC:STANTONBURG	12 381	93.5	90.7	0.8	0.7	8.9	1.6	NA		NA		NA		NA	
USRN17107	NC:STONEVILLE	102281	1236.5	111.3	0.1	0.4	0.7	0.8	NA		NA		NA		NA	
USRN17797	NC:SURF CITY	111981	-8.4	90.4	0.1	0.7	1.3	1.2	NA		NA		NA		NA	
USRN17888	NC:SWAN QUARTER	112181	7.7	130.1	-0.9	1.8	4.3	5.2	NA		NA		NA		NA	
USRN17316	NC:SWANSBORO	103181	115.9	103.5	0.8	0.9	2.0	1.3	NA		NA		NA		NA	
USRN17817	NC:TABOR CITY	112081	4.5	80.0	0.9	1.1	5.8	2.5	NA		NA		NA		NA	
USRN17434	NC:TARBORO	11 681	461.7	147.1	8.8	3.6	13.7	5.1	1.4	-0.0	NA		6.7	0.7	4.9	0.5
USRN17138*	NC:TAYLORSVILLE	102281	-9.9	90.0	0.0	0.2	1.6	0.8	NA		NA		NA		NA	
USRN17169	NC:TROUTMAN	102781	3083.0	92.6	0.6	0.5	3.4	1.0	NA		NA		NA		NA	
USRN17171*	NC:TRYON	102781	-6.3	57.4	0.2	0.3	1.6	1.0	NA		NA		NA		NA	
USRN17343	NC:WALKERTOWN	11 381	2236.5	111.9	7.5	1.2	1.5	0.4	0.6	0.0	NA		4.0	0.5	2.7	0.3
USRN17109	NC:WALLACE	102381	44.1	77.9	0.3	0.6	7.9	1.5	NA		NA		NA		NA	
USRN17126	NC:WARSAW	102281	70.6	93.4	0.0	0.0	1.8	0.9	NA		NA		NA		NA	
USRN17106	NC:WEST JEFFERSON	102281	645.2	103.3	0.1	0.3	1.0	0.8	NA		NA		NA		NA	
USRN17429	NC:WHITAKERS	11 581	2149.5	117.7	7.6	1.3	10.8	1.4	5.6	-0.1	9.2	1.1	0.5	0.1	0.1	0.0
USRN17786	NC:WHITE LAKE	111981	-36.3	87.7	0.3	0.6	3.8	1.7	NA		NA		NA		NA	
USRN17820X	NC:WHITEVILLE	111981	-33.1	90.8	0.1	0.5	6.9	1.5	NA		NA		NA		NA	
USRN17820	NC:WHITEVILLE	111981	116.9	107.4	0.0	0.0	8.0	1.8	NA		NA		NA		NA	
USRN15184*	NC:WILKESBORO	72981	84.0	127.9	0.1	0.2	1.4	0.9	NA		NA		NA		NA	
USRN17481	NC:WILLIAMSTON	111081	179.6	67.3	0.5	1.1	7.9	2.9	NA		NA		NA		NA	
USRN17403	NC:WILMINGTON	11 481	58.8	102.2	-0.2	0.6	0.3	1.3	NA		NA		NA		NA	
USRN17790X	NC:WILMINGTON BEAC	111881	71.4	106.4	0.3	0.9	2.4	2.4	NA		NA		NA		NA	
USRN17790	NC:WILMINGTON BEAC	111881	136.8	124.5	0.0	0.0	2.2	2.3	NA		NA		NA		NA	
USRN17468	NC:WINDSOR	111081	178.6	67.7	0.5	2.1	6.1	4.4	NA		NA		NA		NA	
USRN17436	NC:WINTERVILLE	11 681	114.3	129.8	0.4	0.8	3.1	1.5	NA		NA		NA		NA	
USRN17749	NC:WINTON	111881	164.4	67.0	0.3	0.8	3.2	2.1	NA		NA		NA		NA	
USRN17789	NC:WRIGHTSVILLE	111881	-37.9	103.2	-0.3	0.9	3.1	2.3	NA		NA		NA		NA	
USRN17406	NC:WRIGHTSVILLE BE	11 481	39.7	100.9	0.4	0.9	2.8	2.1	NA		NA		NA		NA	
USRN17792	NC:WRIGHTSVILLE BE	111881	37.0	102.7	0.2	0.4	1.0	1.0	NA		NA		NA		NA	
USRN17796	NC:WRIGHTSVILLE BE	111881	-9.7	102.9	0.4	0.7	1.5	1.5	NA		NA		NA		NA	
USRN16687	NC:YAUPON BEACH	10 681	44.4	72.4	-0.2	0.7	2.1	1.0	NA		NA		NA		NA	
USRN16944	NC:YOUNGSVILLE	101481	2637.5	131.9	0.7	0.4	4.8	1.2	NA		NA		NA		NA	

* Surface water supply; all others are groundwater supplies.

Table B.22 Natural radioactivity in public water systems-North Dakota

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN10999	ND:ASHLEY	22481	74.8	50.1	0.2	0.9	5.5	1.4	NA		NA		NA		NA	
USRN10173	ND:BEACH	11381	330.5	80.9	1.8	3.6	0.3	1.4	0.1	0.0	NA		NA		NA	
USRN10122	ND:BELFIELD	1 681	504.0	83.0	0.4	3.2	0.8	2.8	NA		NA		NA		NA	
USRN13215	ND:BEULAH	51881	88.9	89.8	0.4	0.8	4.9	1.3	NA		NA		NA		NA	
USRN12561	ND:BOTTINEAU	42281	287.4	117.8	0.6	0.9	7.0	1.4	NA		NA		NA		NA	
USRN12562	ND:BOTTINEAU	42181	89.9	128.6	11.0	4.2	2.0	2.2	0.1	0.0	NA		11.7	1.1	8.6	0.8
USRN10691	ND:BOWMAN	2 681	246.9	69.3	0.3	0.6	1.3	0.7	NA		NA		NA		NA	
USRN12560	ND:CANDO	42281	181.8	127.0	0.0	0.0	10.0	5.4	NA		NA		NA		NA	
USRN12560X	ND:CANDO	42281	203.6	110.7	0.0	0.0	6.0	4.6	NA		NA		NA		NA	
USRN11434	ND:CARRINGTON	31881	11.4	28.3	0.2	0.5	5.0	1.1	NA		NA		NA		NA	
USRN12954	ND:CAVALIER	5 681	301.8	81.5	0.4	0.7	2.1	1.1	NA		NA		NA		NA	
USRN11433	ND:COOPERSTOWN	31881	152.3	72.4	0.0	0.0	6.0	3.9	NA		NA		NA		NA	
USRN12107	ND:CROSBY	4 881	25.7	123.8	1.0	1.6	3.0	3.7	NA		NA		NA		NA	
USRN12557	ND:DEVIL'S LAKE	42381	184.6	99.5	0.3	0.8	2.0	0.6	NA		NA		NA		NA	
USRN03427	ND:ELLENDALE	121080	68.9	81.3	6.8	3.2	16.0	2.4	0.1	0.0	NA		3.1	0.3	1.7	0.2
USRN13357	ND:ENDERLIN	52681	22.4	60.1	-1.2	1.4	5.3	5.3	NA		NA		NA		NA	
USRN11647	ND:FINLEY	31981	-22.1	66.9	0.0	0.0	5.0	1.1	NA		NA		NA		NA	
USRN12957	ND:FINLEY	5 881	176.6	78.6	-0.1	0.6	4.2	1.2	NA		NA		NA		NA	
USRN12559	ND:FORT TOTTON	42381	346.3	100.0	0.1	0.6	4.0	1.1	NA		NA		NA		NA	
USRN10265	ND:GARRISON	12281	-12.8	71.3	2.1	2.0	6.0	1.6	NA		NA		NA		NA	
USRN12958	ND:GILBY	5 881	42.5	79.1	0.7	0.7	1.9	1.0	NA		NA		NA		NA	
USRN12956	ND:GILBY	5 881	125.7	80.1	0.4	0.9	6.4	1.4	NA		NA		NA		NA	
USRN10120X	ND:GLEN ULLIN	1 781	284.0	70.8	1.2	3.8	1.9	2.8	NA		NA		NA		NA	
USRN10120	ND:GLEN ULLIN	1 781	NA		1.4	2.6	0.3	1.4	0.2	0.0	NA		NA		NA	
USRN12953	ND:GRAFTON	5 881	240.4	81.9	1.0	0.8	3.0	1.1	NA		NA		NA		NA	
USRN03414	ND:HANKINSON	121080	56.5	57.5	2.0	0.9	2.5	0.7	NA		NA		NA		NA	
USRN12435	ND:HARVEY	42181	-21.0	83.1	0.0	0.0	5.0	1.3	NA		NA		NA		NA	
USRN13216	ND:HAZEN	51881	20.1	88.7	1.5	2.7	8.6	4.6	0.1	0.0	NA		NA		NA	
USRN10123	ND:HEBRON	1 781	140.7	67.5	0.4	3.2	0.7	3.2	NA		NA		NA		NA	
USRN10692	ND:HETTINGER CITY	2 681	286.1	68.2	0.6	0.7	0.4	0.5	NA		NA		NA		NA	
USRN11548	ND:HILLSBORO	31981	58.5	67.4	1.0	2.0	5.0	2.6	NA		NA		NA		NA	
USRN11519	ND:JAMESTOWN	32081	67.8	50.7	0.3	0.6	5.0	0.9	NA		NA		NA		NA	
USRN11520X	ND:JAMESTOWN	32081	61.9	51.9	1.1	2.5	7.0	3.4	NA		NA		NA		NA	
USRN11520	ND:JAMESTOWN	32081	40.6	85.2	0.6	2.1	9.0	3.3	NA		NA		NA		NA	
USRN12113	ND:KENMARE	4 981	-54.8	100.0	2.0	3.5	9.0	4.9	NA		NA		NA		NA	
USRN12111	ND:KENMARE	4 981	114.5	104.4	0.2	0.6	2.0	1.0	NA		NA		NA		NA	
USRN12112	ND:KENMARE	4 981	25.4	104.1	0.4	3.4	12.0	5.0	NA		NA		NA		NA	
USRN14251	ND:KILLDEER	62981	335.8	151.8	0.6	2.8	9.4	4.8	NA		NA		NA		NA	
USRN13634	ND:KINDRED	6 581	92.7	93.1	1.3	0.9	7.3	1.4	NA		NA		NA		NA	
USRN13453	ND:KINDRED	52881	161.9	125.8	4.2	3.8	8.5	4.9	0.1	0.0	NA		0.4	0.1	0.2	0.0
USRN13633	ND:KINDRED	6 581	305.8	97.9	1.3	0.9	3.1	1.0	NA		NA		NA		NA	
USRN13635	ND:KINDRED	6 581	88.6	93.1	6.1	2.0	5.1	1.7	0.1	0.0	NA		0.1	0.0	0.0	0.0
USRN11030X	ND:LA MOURE	22581	368.2	84.7	4.0	1.8	7.0	1.5	0.3	0.0	NA		NA		NA	
USRN11030	ND:LA MOURE	22581	NA		5.0	1.9	5.0	1.3	NA		NA		NA		NA	
USRN11517	ND:LAKOTA	31881	-19.1	77.8	0.0	0.0	4.0	0.9	NA		NA		NA		NA	
USRN11549	ND:LARIMORE	31981	121.4	71.5	1.0	0.8	5.0	1.0	NA		NA		NA		NA	
USRN03412	ND:LIDGERWOOD	121080	194.8	78.1	2.0	1.1	9.9	1.2	NA		NA		NA		NA	
USRN10997	ND:LINTON	22481	246.7	53.9	7.0	3.6	11.0	3.3	0.2	0.0	NA		4.8	0.4	3.6	0.3
USRN03413	ND:LISBON	121180	219.2	70.1	2.4	4.4	6.5	1.9	0.1	0.0	NA		2.0	0.2	1.5	0.2
USRN10267	ND:MOHALL	12181	-174.5	78.4	0.4	0.7	14.2	1.4	NA		NA		NA		NA	
USRN10174	ND:MOTT	11481	221.3	68.6	1.3	2.5	1.8	2.6	NA		NA		NA		NA	
USRN11031	ND:NAPOLEON	22581	437.0	98.2	0.9	0.8	3.0	0.5	NA		NA		NA		NA	
USRN11515	ND:NEW ROCKFORD	31881	55.1	75.5	0.3	2.3	8.0	3.8	NA		NA		NA		NA	

Table B.22 Natural radioactivity in public water systems-North Dakota (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN10121	ND:NEW SALEM	1 781	109.0	68.2	0.2	1.6	1.2	2.2	NA		NA		NA		NA	
USRN12129	ND:NEW TOWN	4 781	-8.8	142.9	0.6	2.4	6.0	5.0	NA		NA		NA		NA	
USRN03425	ND:OAKES	121080	162.5	84.5	3.4	1.5	5.8	1.5	0.3	0.0	NA		NA		NA	
USRN12128	ND:PARSHALL	4 781	-17.4	141.9	0.5	1.6	6.0	4.9	NA		NA		NA		NA	
USRN11518	ND:PETERSBURG	31881	-53.7	76.3	4.0	1.4	5.0	0.9	0.1	0.0	NA		2.2	0.3	1.7	0.2
USRN11516	ND:PORTLAND	31981	62.3	68.5	0.2	0.5	2.0	0.5	NA		NA		NA		NA	
USRN12558	ND:ROLLA	42281	449.6	118.8	2.0	2.8	8.0	4.6	NA		NA		NA		NA	
USRN12434	ND:RUGBY	42181	-17.1	83.0	0.1	0.5	2.0	0.7	NA		NA		NA		NA	
USRN12109	ND:STANLEY	4 881	300.7	129.4	0.0	0.0	23.0	6.7	NA		NA		NA		NA	
USRN12606	ND:THOMPSON	42281	325.9	150.6	0.2	0.7	4.2	1.3	NA		NA		NA		NA	
USRN12108	ND:TIOGA	4 881	235.6	128.3	2.0	2.4	10.0	4.6	NA		NA		NA		NA	
USRN10266	ND:UNDERWOOD	12281	168.8	72.6	6.2	1.5	3.1	0.6	0.8	0.0	NA		NA		NA	
USRN11514	ND:VALLEY CITY	32081	139.1	52.0	0.3	2.3	8.0	3.4	NA		NA		NA		NA	
USRN12110X	ND:VELVA	4 981	104.7	102.6	1.0	0.7	7.0	1.5	NA		NA		NA		NA	
USRN12110	ND:VELVA	4 981	41.3	167.5	0.4	0.6	5.0	1.4	NA		NA		NA		NA	
USRN13519	ND:WAHPETON	52781	176.3	59.9	1.1	0.7	1.6	0.8	NA		NA		NA		NA	
USRN03426	ND:WAHPETON	121180	22.7	67.8	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN12955	ND:WALHALLA	5 781	1283.5	115.7	4.6	2.4	6.6	3.6	NA		NA		NA		NA	
USRN14250X	ND:WATFORD CITY	62981	30.6	148.3	-0.6	2.0	7.6	4.8	NA		NA		NA		NA	
USRN14250	ND:WATFORD CITY	62981	46.0	141.3	-0.3	2.1	8.4	4.7	NA		NA		NA		NA	
USRN13454	ND:WEST FARGO	52881	152.3	88.1	2.5	2.5	4.1	1.7	NA		NA		NA		NA	
USRN14249*	ND:WILLISTON	62981	-95.5	138.6	0.4	0.6	3.0	1.1	NA		NA		NA		NA	
USRN10998	ND:WISHEK	22481	NA		4.0	1.8	9.5	1.6	0.2	0.0	NA		NA		NA	

* Surface water supply; all others are groundwater supplies.

Table B.23 Natural radioactivity in public groundwater systems-Ohio

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15262	OH:ANDOVER	72981	0.0	66.3	0.4	0.6	2.0	1.0	NA		NA		NA		NA	
USRN14050	OH:ATHENS	62281	232.2	90.5	1.1	0.9	1.5	1.0	NA		NA		NA		NA	
USRN14050X	OH:ATHENS	62281	117.5	74.5	0.3	0.8	2.2	1.2	NA		NA		NA		NA	
USRN12739	OH:BELLE FONTAINE	42981	487.6	138.9	1.4	0.8	1.3	0.7	NA		NA		NA		NA	
USRN14074	OH:BELPRE	62281	372.0	81.7	0.4	0.7	1.1	0.9	NA		NA		NA		NA	
USRN12677	OH:BRYAN	42981	5.8	60.5	1.2	0.8	1.9	0.9	NA		NA		NA		NA	
USRN15260X	OH:CANTON	8 481	121.6	65.6	0.8	1.6	3.8	2.1	NA		NA		NA		NA	
USRN15260	OH:CANTON	8 481	108.1	63.2	0.2	1.1	2.6	2.0	NA		NA		NA		NA	
USRN14051	OH:CHILLICOTHE	62381	77.6	64.7	0.8	0.8	2.3	1.0	NA		NA		NA		NA	
USRN14046	OH:CHILLICOTHE	62381	76.7	63.7	0.4	0.3	1.8	1.0	NA		NA		NA		NA	
USRN14049	OH:CHILLICOTHE	62381	181.5	72.9	0.9	0.8	1.6	1.1	NA		NA		NA		NA	
USRN14917	OH:COLUMBIANA	72281	54.0	66.4	0.2	0.4	1.5	0.9	NA		NA		NA		NA	
USRN14849	OH:COSHOCTON	72181	218.5	64.0	0.3	0.5	1.6	1.0	NA		NA		NA		NA	
USRN12944	OH:CRESTLINE	5 581	203.6	73.9	0.6	0.7	1.8	1.0	NA		NA		NA		NA	
USRN15176	OH:CUYAHOGA FALLS	72981	82.1	69.5	1.2	1.8	-1.2	5.4	NA		NA		NA		NA	
USRN15612	OH:DAYTON	81881	189.4	59.3	0.1	0.5	2.0	1.0	NA		NA		NA		NA	
USRN12680	OH:DELPHOS	42981	NA		2.9	2.5	0.3	1.1	1.7	0.1	NA		NA		NA	
USRN12680X	OH:DELPHOS	42981	11.0	61.7	2.4	2.0	5.5	3.8	NA		NA		0.3	0.1	0.1	0.0
USRN14852	OH:DOVER	72181	201.9	62.8	0.2	0.7	2.3	1.1	NA		NA		NA		NA	
USRN14915	OH:EAST PALESTINE	72281	180.1	68.4	0.6	0.6	1.5	1.0	NA		NA		NA		NA	
USRN15497	OH:EATON	81081	40.3	59.9	1.7	0.9	1.3	0.8	NA		NA		NA		NA	
USRN15608	OH:ENGLEWOOD	81881	289.4	60.6	0.8	1.2	6.5	4.3	NA		NA		NA		NA	
USRN14140	OH:FAIRBORN	62481	-6.7	108.5	0.4	0.7	0.0	0.3	NA		NA		NA		NA	
USRN14140X	OH:FAIRBORN	62481	44.1	62.9	1.1	0.8	-0.2	0.4	NA		NA		NA		NA	
USRN15503	OH:FRANKLIN	8 581	110.9	64.0	0.1	0.6	2.2	1.0	NA		NA		NA		NA	
USRN14656	OH:FRANKLIN	71481	337.4	69.1	0.2	0.5	1.8	1.0	NA		NA		NA		NA	
USRN14048	OH:GALLIPOLIS	62381	367.1	70.4	0.2	0.7	1.7	1.0	NA		NA		NA		NA	
USRN14053	OH:GALLIPOLIS	62381	130.9	61.4	0.2	0.5	1.9	1.1	NA		NA		NA		NA	
USRN15350X	OH:GERMANTOWN	8 681	218.6	89.7	0.4	0.7	1.8	1.0	NA		NA		NA		NA	
USRN15350	OH:GERMANTOWN	8 681	234.8	97.1	0.6	0.7	2.9	1.1	NA		NA		NA		NA	
USRN14373	OH:GRANVILLE	62981	54.0	59.3	0.3	0.5	1.8	0.9	NA		NA		NA		NA	
USRN14217	OH:GREENFIELD	63081	647.2	70.7	0.8	0.7	3.2	1.2	NA		NA		NA		NA	
USRN15496	OH:HAMILTON	81081	133.4	74.3	0.0	0.0	2.0	1.0	NA		NA		NA		NA	
USRN15310X	OH:HARRISON	8 581	212.9	69.6	0.4	0.8	1.7	1.1	NA		NA		NA		NA	
USRN15310	OH:HARRISON	8 581	247.1	92.6	0.2	0.6	1.6	1.1	NA		NA		NA		NA	
USRN14219	OH:HILLSBORO	63081	38.0	59.8	0.4	0.5	0.8	0.9	NA		NA		NA		NA	
USRN15117	OH:HUBBARD	73081	1.1	88.8	0.3	0.5	3.3	1.1	NA		NA		NA		NA	
USRN15609	OH:HUBER HEIGHTS	81881	685.9	68.6	1.9	1.7	1.7	2.8	NA		NA		NA		NA	
USRN15504	OH:HUNTER	8 581	45.1	64.6	1.9	1.8	7.6	4.3	NA		NA		NA		NA	
USRN15095	OH:KENT	72981	35.8	67.1	0.1	0.6	1.5	1.0	NA		NA		NA		NA	
USRN15498	OH:KINGS MILLS	81081	87.5	73.5	0.2	0.6	2.1	1.1	NA		NA		NA		NA	
USRN14179	OH:LANCASTER	62981	31.0	60.3	1.3	1.8	4.1	4.5	NA		NA		NA		NA	
USRN14607	OH:LEBANON	71381	36.8	59.7	0.8	1.3	7.5	4.2	NA		NA		NA		NA	
USRN15308	OH:LOCKLAND	8 581	69.7	67.8	0.3	0.5	1.5	0.9	NA		NA		NA		NA	
USRN14180	OH:LOGAN	62981	70.0	62.6	2.3	2.4	5.6	4.1	NA		NA		NA		NA	
USRN14180X	OH:LOGAN	62981	94.4	60.8	1.2	1.9	4.9	4.5	NA		NA		NA		NA	
USRN12868	OH:LONDON	5 481	110.0	58.9	0.2	0.5	1.2	1.0	NA		NA		NA		NA	
USRN15264	OH:LOUISVILLE	8 481	33.9	60.3	0.5	1.3	3.0	1.9	NA		NA		NA		NA	
USRN15309	OH:LOVELAND	8 581	295.5	70.9	0.7	0.9	3.1	1.1	NA		NA		NA		NA	
USRN14047	OH:LUCASVILLE	62381	95.6	64.9	0.4	0.6	2.1	1.0	NA		NA		NA		NA	
USRN14019	OH:MARIETTA	62281	188.7	78.8	0.0	0.0	2.2	1.2	NA		NA		NA		NA	
USRN14916	OH:MARTINS FERRY	72281	297.6	69.9	0.2	0.8	3.7	1.3	NA		NA		NA		NA	
USRN14603	OH:MASON	71381	57.3	60.2	0.7	0.7	1.7	1.0	NA		NA		NA		NA	

Table B.23 Natural radioactivity in public groundwater systems-Ohio (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15263	OH:MASSILLON	8 481	57.5	61.4	0.3	0.6	2.4	1.1	NA		NA		NA		NA	
USRN15349	OH:MIAMISBURG	8 681	-7.4	85.9	1.5	0.9	2.1	1.0	NA		NA		NA		NA	
USRN14606	OH:MIAMISVILLE	71381	550.0	68.6	0.4	0.6	3.1	1.2	NA		NA		NA		NA	
USRN14605	OH:MILFORD	71381	543.9	67.9	0.7	0.8	2.2	1.0	NA		NA		NA		NA	
USRN15499	OH:MILLVILLE	81081	168.3	74.1	0.8	0.7	2.5	1.1	NA		NA		NA		NA	
USRN14979	OH:MINGO JUNCTION	72281	414.0	72.4	0.6	0.7	1.4	0.9	NA		NA		NA		NA	
USRN15611	OH:MORAINE	81881	283.8	62.3	0.6	1.9	5.0	4.2	NA		NA		NA		NA	
USRN14604	OH:MORROW	71381	98.0	62.0	0.4	0.8	2.7	1.2	NA		NA		NA		NA	
USRN14850X	OH:MT. VERNON	72181	76.4	62.3	-0.2	0.4	1.1	1.0	NA		NA		NA		NA	
USRN14850	OH:MT. VERNON	72181	66.8	64.8	-0.1	0.4	1.4	1.0	NA		NA		NA		NA	
USRN15261	OH:N. CANTON	8 481	129.3	62.3	0.5	0.6	2.0	1.0	NA		NA		NA		NA	
USRN12738	OH:NEW CARLISLE	43081	117.3	107.4	0.8	0.8	1.5	0.9	NA		NA		NA		NA	
USRN14851	OH:NEW PHILADELPHI	72181	155.1	62.3	-0.5	2.2	7.4	4.7	NA		NA		NA		NA	
USRN14697	OH:NEW RICHMOND	71381	233.9	101.8	0.8	0.7	2.0	1.0	NA		NA		NA		NA	
USRN15622	OH:OAKWOOD	81881	289.4	73.6	1.4	1.8	7.6	4.3	NA		NA		NA		NA	
USRN15265	OH:ORVILLE	8 481	118.0	63.3	0.4	0.6	2.4	1.0	NA		NA		NA		NA	
USRN15306	OH:OXFORD	8 581	153.7	66.4	0.5	0.7	3.0	1.2	NA		NA		NA		NA	
USRN15094	OH:RAVENNA	72981	54.8	67.4	0.5	0.6	2.3	1.1	NA		NA		NA		NA	
USRN14136	OH:RICKENBACKER AF	62681	19.3	52.4	1.3	2.1	11.2	4.8	NA		NA		NA		NA	
USRN15116	OH:RITTMAN	73081	28.8	87.4	1.5	0.8	1.1	0.7	NA		NA		NA		NA	
USRN14957	OH:SHADYSIDE	72381	327.9	92.0	0.4	1.8	6.1	4.7	NA		NA		NA		NA	
USRN12742	OH:SPRINGFIELD	43081	32.0	89.3	0.1	0.4	2.4	1.0	NA		NA		NA		NA	
USRN12737	OH:SPRINGFIELD	43081	195.8	66.3	1.5	1.0	2.5	1.1	NA		NA		NA		NA	
USRN12678	OH:ST. MARY´S	42981	139.9	65.1	0.2	0.7	3.0	1.1	NA		NA		NA		NA	
USRN12763	OH:TIPP CITY	43081	295.6	96.1	1.1	0.7	2.1	0.9	NA		NA		NA		NA	
USRN15307	OH:TRENTON	8 581	310.0	69.7	1.1	1.5	-0.2	3.4	NA		NA		NA		NA	
USRN12740X	OH:TROY	43081	-42.6	89.6	-0.1	0.5	3.1	1.1	NA		NA		NA		NA	
USRN12740	OH:TROY	43081	18.2	107.1	0.0	0.0	2.8	1.0	NA		NA		NA		NA	
USRN14138	OH:TUPPERS PLAINS	62281	300.4	79.3	0.1	0.7	0.0	0.3	NA		NA		NA		NA	
USRN12741	OH:URBANA	43081	680.5	113.6	0.0	0.0	2.8	1.2	NA		NA		NA		NA	
USRN15610	OH:W. CARROLTON	81881	257.1	74.0	0.2	1.4	3.4	4.1	NA		NA		NA		NA	
USRN15610X	OH:W. CARROLTON	81881	292.6	73.1	1.0	2.0	5.8	6.9	NA		NA		NA		NA	
USRN15175	OH:WADSWORTH	72981	14.7	68.6	0.1	0.5	0.8	0.9	NA		NA		NA		NA	
USRN12679	OH:WAPAKONETA	42981	21.3	63.6	0.3	0.4	-0.1	1.4	NA		NA		NA		NA	
USRN14052	OH:WAVERLY	62381	66.8	62.3	1.1	0.7	2.1	0.9	NA		NA		NA		NA	
USRN12841	OH:WESTERVILLE	5 581	51.8	72.6	1.0	0.9	2.6	1.2	NA		NA		NA		NA	
USRN14137	OH:WESTERVILLE	62681	-10.5	72.1	1.0	1.7	2.4	4.1	NA		NA		NA		NA	
USRN15259	OH:WOOSTER	8 481	142.3	63.7	0.2	0.5	1.5	0.9	NA		NA		NA		NA	
USRN15311	OH:WYOMING	8 581	129.4	66.9	0.1	0.5	2.1	1.0	NA		NA		NA		NA	
USRN14139	OH:XENIA	62481	102.1	63.9	1.5	1.0	2.0	1.0	NA		NA		NA		NA	
USRN14958	OH:ZANESVILLE	72381	138.7	88.0	0.5	0.7	2.9	1.2	NA		NA		NA		NA	

Table B.24 Natural radioactivity in public groundwater systems-Oklahoma

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14039	OK:ADA	61981	170.3	79.7	2.7	1.1	1.2	0.7	NA		NA		NA		NA	
USRN14076	OK:ALVA	62481	181.6	64.5	0.7	0.6	1.7	0.9	NA		NA		NA		NA	
USRN13707	OK:BETHANY	6 981	22.9	57.4	0.1	1.0	10.4	2.9	NA		NA		NA		NA	
USRN13654	OK:BRISTOW	6 481	321.7	119.7	5.8	1.4	4.7	1.1	0.8	0.0	NA		3.0	0.3	1.7	0.2
USRN13730X	OK:BURNS FLAT	61081	86.6	60.4	0.4	1.0	8.6	2.4	NA		NA		NA		NA	
USRN13730	OK:BURNS FLAT	61081	117.5	64.3	0.3	1.1	11.5	2.6	NA		NA		NA		NA	
USRN13731	OK:CARTER	61081	118.7	61.4	0.8	0.6	1.2	0.3	NA		NA		NA		NA	
USRN13653	OK:DRUMWRIGHT	6 481	44.3	114.4	1.0	1.1	4.5	1.9	NA		NA		NA		NA	
USRN13706	OK:EDMOND	6 981	126.8	59.3	14.6	2.1	4.1	0.8	0.3	0.0	NA		12.4	1.2	5.7	0.6
USRN13704	OK:EL RENO	6 981	47.0	67.9	2.9	3.2	7.5	4.7	NA		NA		NA		NA	
USRN13735	OK:ELK CITY	61081	65.6	60.2	0.7	0.7	1.6	0.2	NA		NA		NA		NA	
USRN13804	OK:ENID	61281	230.7	76.7	1.9	1.2	1.9	1.0	NA		NA		NA		NA	
USRN14075	OK:FAIRVIEW	62481	132.6	64.0	0.3	0.9	2.6	1.1	NA		NA		NA		NA	
USRN14142	OK:GUYMON	62381	247.9	63.2	4.1	1.3	7.0	1.4	0.3	0.0	NA		4.3	0.4	2.7	0.3
USRN14141	OK:HEALDTON	61981	48.4	84.1	-0.6	1.8	5.5	5.0	NA		NA		NA		NA	
USRN13734	OK:HOLLIS	61081	28.6	59.6	2.8	1.0	0.9	0.7	NA		NA		NA		NA	
USRN13806	OK:KINGFISHER	61281	76.6	73.7	3.3	2.9	6.3	4.3	0.1	0.0	NA		3.0	0.3	2.2	0.2
USRN13930	OK:LINDSAY	61881	281.1	105.1	0.0	0.0	3.0	5.1	NA		NA		NA		NA	
USRN13930X	OK:LINDSAY	61881	173.6	92.1	1.9	2.0	-0.6	2.3	NA		NA		NA		NA	
USRN13736	OK:MANGUM	61081	103.4	61.7	0.2	0.7	2.5	1.1	NA		NA		NA		NA	
USRN13931	OK:MARLOW	61881	124.4	91.4	2.0	1.1	2.9	1.2	NA		NA		NA		NA	
USRN13626	OK:MIAMI	6 481	164.4	115.3	0.9	0.7	3.8	1.2	NA		NA		NA		NA	
USRN13803	OK:MOORE	61181	53.8	88.9	0.4	0.6	4.1	1.3	NA		NA		NA		NA	
USRN13708	OK:NICHOLS	6 981	121.4	59.3	5.3	1.9	1.1	0.9	0.1	0.0	NA		6.7	0.6	2.2	0.2
USRN13805	OK:NORMAN	61181	97.7	89.3	21.8	5.3	6.1	3.0	0.1	0.0	NA		27.1	2.4	16.4	1.5
USRN13929	OK:PURCELL	61881	81.5	90.7	12.4	4.0	0.6	0.7	0.3	0.0	NA		2.5	0.3	1.6	0.2
USRN13733	OK:SAYRE	61081	110.0	60.7	1.7	1.0	1.3	0.9	NA		NA		NA		NA	
USRN14040X	OK:SEMINOLE	61981	189.1	80.3	2.3	1.0	2.0	0.9	NA		NA		NA		NA	
USRN14040	OK:SEMINOLE	61981	257.1	91.7	0.3	0.6	1.8	1.0	NA		NA		NA		NA	
USRN14038	OK:SULPHUR	61981	901.2	99.2	5.7	1.5	1.8	0.8	0.1	0.0	NA		0.4	0.1	0.1	0.0
USRN13658	OK:TONKAWA	61281	118.4	76.3	3.6	2.3	5.5	4.0	0.2	0.0	NA		2.4	0.3	1.9	0.2
USRN14042	OK:WATONGA	62381	284.5	66.5	1.9	1.1	1.9	1.0	NA		NA		NA		NA	
USRN13732	OK:WEATHERFORD	61081	419.7	66.9	1.5	1.0	2.1	1.0	NA		NA		NA		NA	
USRN14041	OK:WOODWARD	62381	262.8	64.0	0.5	0.6	1.9	1.1	NA		NA		NA		NA	
USRN13705	OK:YUKON	6 981	138.4	70.3	4.8	1.4	3.0	0.9	0.1	0.0	NA		8.8	0.9	4.6	0.5

Table B.25 Natural radioactivity in public groundwater systems-Oregon

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN11699	OR:AMITY	32781	214.7	67.6	0.2	0.4	2.0	0.6	NA		NA		NA		NA	
USRN11702	OR:AUMSVILLE	32781	382.6	69.4	0.1	0.3	1.0	0.5	NA		NA		NA		NA	
USRN13285	OR:BEND	52281	150.6	95.4	0.1	0.2	1.8	0.9	NA		NA		NA		NA	
USRN16542	OR:BEND	92981	128.9	128.2	0.0	0.0	0.8	0.8	NA		NA		NA		NA	
USRN10581	OR:BORING	2 681	181.2	47.8	0.1	0.3	0.9	0.5	NA		NA		NA		NA	
USRN10583	OR:BORING	2 681	159.5	47.9	0.2	0.5	4.3	0.8	NA		NA		NA		NA	
USRN16760X	OR:BURNS	92981	234.7	137.1	0.2	0.3	4.4	1.1	NA		NA		NA		NA	
USRN16760	OR:BURNS	92981	277.5	151.1	0.2	0.3	3.6	1.0	NA		NA		NA		NA	
USRN11695	OR:DAYTON	32781	261.3	67.8	0.1	0.3	0.7	0.5	NA		NA		NA		NA	
USRN13228	OR:DRAIN	51881	-5.3	88.0	0.2	0.3	2.0	0.9	NA		NA		NA		NA	
USRN11696	OR:DUNDEE	32781	229.6	66.9	0.1	0.2	0.7	0.5	NA		NA		NA		NA	
USRN16433	OR:ELGIN	92881	150.4	71.9	0.2	0.3	1.3	0.8	NA		NA		NA		NA	
USRN11595	OR:GLADSTONE	32481	275.5	45.4	0.1	0.3	0.8	0.6	NA		NA		NA		NA	
USRN10261	OR:HARRISBURG	12281	14.1	57.0	0.3	0.5	0.5	0.6	NA		NA		NA		NA	
USRN16434	OR:HERMISTON	92881	19.1	70.4	0.1	0.5	9.1	1.5	NA		NA		NA		NA	
USRN16761	OR:HINES	92981	140.6	134.4	0.2	0.6	5.3	1.2	NA		NA		NA		NA	
USRN11493	OR:HOOD RIVER	31981	290.1	55.0	0.0	0.0	1.0	0.7	NA		NA		NA		NA	
USRN11496	OR:HOOD RIVER	31981	214.1	55.6	0.1	0.2	1.0	0.4	NA		NA		NA		NA	
USRN11701	OR:HUBBARD	32781	120.8	67.6	0.1	0.4	1.0	0.5	NA		NA		NA		NA	
USRN11698	OR:INDEPENDENCE	32781	383.4	68.8	0.3	0.7	2.0	0.7	NA		NA		NA		NA	
USRN11598	OR:JANTZEN BEACH	32481	145.6	45.1	0.1	0.4	4.0	0.7	NA		NA		NA		NA	
USRN10260	OR:JEFFERSON	12281	NA		0.2	0.4	0.5	0.5	NA		NA		NA		NA	
USRN10260X	OR:JEFFERSON	12281	348.8	59.1	0.4	0.5	0.4	0.4	NA		NA		NA		NA	
USRN16541	OR:JOHN DAY	92981	179.6	146.3	0.2	0.5	2.8	1.1	NA		NA		NA		NA	
USRN10259	OR:JUNCTION CITY	12281	234.2	58.5	0.2	0.4	0.3	0.5	NA		NA		NA		NA	
USRN13226	OR:KLAMATH FALLS	51981	378.8	82.4	0.2	0.3	2.5	1.0	NA		NA		NA		NA	
USRN11594	OR:LAKE OSWEGO	32481	683.0	47.8	0.2	0.5	2.0	0.5	NA		NA		NA		NA	
USRN13284	OR:LAKEVIEW	52181	-25.2	105.3	0.0	0.0	1.6	0.9	NA		NA		NA		NA	
USRN13283	OR:MADRAS	52281	21.9	92.2	0.3	0.3	1.7	0.9	NA		NA		NA		NA	
USRN16436	OR:MILTON-FREEWATE	92881	310.3	76.0	-0.2	0.4	2.0	0.9	NA		NA		NA		NA	
USRN11596	OR:MILWAUKIE	32481	322.7	45.2	0.2	0.4	0.3	0.5	NA		NA		NA		NA	
USRN10394	OR:MOUNT ANGEL	12681	196.8	55.8	0.7	0.9	3.1	0.7	NA		NA		NA		NA	
USRN11700	OR:NEWBERG	32781	NA		0.1	0.3	2.0	0.6	NA		NA		NA		NA	
USRN11700X	OR:NEWBERG	32781	211.1	66.5	0.1	0.4	0.7	0.6	NA		NA		NA		NA	
USRN16538	OR:NYSSA	92981	635.0	135.9	3.4	1.3	6.3	1.3	NA		NA		NA		NA	
USRN16688	OR:OAKRIDGE	10 581	228.0	77.2	0.5	0.4	1.9	0.9	NA		NA		NA		NA	
USRN11495	OR:ODELL	31981	68.5	53.2	0.0	0.2	1.0	0.6	NA		NA		NA		NA	
USRN16539	OR:ONTARIO	92981	195.8	128.0	2.6	1.1	5.2	1.2	NA		NA		NA		NA	
USRN11593	OR:OREGON CITY	32481	25.2	43.5	0.1	0.3	0.7	0.7	NA		NA		NA		NA	
USRN13229	OR:PHOENIX	51881	81.4	87.8	0.9	1.7	2.2	4.3	NA		NA		NA		NA	
USRN16437	OR:PILOT ROCK	92881	71.8	70.7	1.1	0.7	3.8	1.1	NA		NA		NA		NA	
USRN11597	OR:PORTLAND	32481	389.0	46.7	0.1	0.3	2.0	0.7	NA		NA		NA		NA	
USRN13286	OR:PRINEVILLE	52281	512.4	99.9	0.2	0.4	2.0	0.9	NA		NA		NA		NA	
USRN13227	OR:ROGUE RIVER	51881	124.6	89.0	0.1	0.3	0.7	0.9	NA		NA		NA		NA	
USRN10412	OR:SALEM	12681	284.6	58.3	0.2	0.4	0.7	0.5	NA		NA		NA		NA	
USRN10392	OR:SALEM	12681	342.7	56.5	0.7	0.6	0.9	0.5	NA		NA		NA		NA	
USRN10395	OR:SALEM	12681	986.5	63.9	0.0	0.0	2.4	0.7	NA		NA		NA		NA	
USRN11697	OR:SHERWOOD	32781	1024.1	76.5	0.1	0.3	2.0	0.6	NA		NA		NA		NA	
USRN12080	OR:SPRINGFIELD	4 781	545.7	247.7	0.2	0.3	0.8	0.5	NA		NA		NA		NA	
USRN12079	OR:SPRINGFIELD	4 781	13.7	88.1	0.1	0.2	0.9	0.6	NA		NA		NA		NA	
USRN12080X	OR:SPRINGFIELD	4 781	564.9	132.7	0.1	0.3	0.9	0.5	NA		NA		NA		NA	
USRN11435	OR:ST. HELENS	31881	401.4	67.2	0.1	0.4	3.0	0.8	NA		NA		NA		NA	
USRN16438	OR:STANFIELD	92881	252.9	74.6	0.3	0.5	5.2	1.2	NA		NA		NA		NA	

Table B.25 Natural radioactivity in public groundwater systems-Oregon (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13282	OR:SUNRIVER	52281	NA		0.1	0.3	0.7	0.8	NA		NA		NA		NA	
USRN11494	OR:THE DALLES	31981	227.7	54.5	0.0	0.0	6.0	0.9	NA		NA		NA		NA	
USRN16435	OR:UMATILLA	92881	90.5	72.5	-0.2	0.7	11.1	1.7	NA		NA		NA		NA	
USRN16540X	OR:VALE	92981	350.9	126.5	6.5	3.2	14.3	5.0	0.1	0.0	NA		2.8	0.3	1.9	0.2
USRN16540	OR:VALE	92981	477.4	143.0	5.4	2.5	12.6	4.4	NA		NA		2.8	0.3	1.8	0.2
USRN12081	OR:VENETA	4 781	383.5	130.1	0.1	0.2	0.9	0.6	NA		NA		NA		NA	
USRN11497	OR:WARREN	31881	471.3	63.5	0.1	0.3	2.0	0.6	NA		NA		NA		NA	
USRN10582	OR:WOOD VILLAGE	2 681	108.6	46.7	0.0	0.0	1.7	0.7	NA		NA		NA		NA	
USRN10393	OR:WOODBURN	12681	415.0	64.3	0.4	0.5	0.9	0.6	NA		NA		NA		NA	

Table 8.26 Natural radioactivity in public groundwater systems-Pennsylvania

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN20002	PA:ALIQUIPPA	123081	350.5	115.7	0.2	0.7	0.8	1.4	NA		NA		NA		NA	
USRN18649	PA:ALIQUIPPA	122381	333.8	113.2	0.2	1.5	4.2	2.3	NA		NA		NA		NA	
USRN17003	PA:AMBLER	101681	1027.0	82.1	1.5	1.0	1.3	1.3	NA		NA		NA		NA	
USRN18087	PA:ASPINWALL	12 281	581.8	75.6	0.1	1.1	1.1	1.9	NA		NA		NA		NA	
USRN17553	PA:AVONMORE	111281	40.8	90.2	0.9	1.3	3.6	2.1	NA		NA		NA		NA	
USRN17995	PA:BARNESBORO	12 281	-29.2	113.1	0.9	1.2	0.8	2.0	NA		NA		NA		NA	
USRN20003	PA:BEAVER	123081	377.0	113.1	-0.5	1.1	5.9	5.2	NA		NA		NA		NA	
USRN17099	PA:BELLEFONTE	102281	237.6	90.3	0.4	0.4	1.4	0.9	NA		NA		NA		NA	
USRN17906	PA:BERKS CITY	112381	163.2	63.6	0.6	1.0	1.2	1.8	NA		NA		NA		NA	
USRN17498	PA:CAMPBELLTOWN	111081	175.1	63.3	0.7	1.0	2.6	2.1	NA		NA		NA		NA	
USRN16958	PA:CHALFONT	101481	2125.0	127.5	2.8	1.1	1.6	0.8	NA		NA		NA		NA	
USRN18063	PA:CHESWICK	12 381	267.0	102.8	0.0	0.0	1.9	1.1	NA		NA		NA		NA	
USRN18130X	PA:CLYMER	12 881	47.3	70.5	1.9	1.5	3.1	2.0	NA		NA		NA		NA	
USRN18130	PA:CLYMER	12 881	64.1	74.9	2.8	1.7	1.8	1.6	NA		NA		NA		NA	
USRN18734	PA:CORAOPOLIS	122981	432.1	66.9	-0.6	1.2	2.6	2.3	NA		NA		NA		NA	
USRN17905	PA:CORAOPOLIS	112481	166.1	79.6	0.2	0.7	2.6	1.8	NA		NA		NA		NA	
USRN17160	PA:CORRY	102781	519.5	77.9	0.4	0.6	1.3	1.0	NA		NA		NA		NA	
USRN17160X	PA:CORRY	102781	533.2	71.9	0.1	0.5	0.9	1.0	NA		NA		NA		NA	
USRN17552	PA:COUDERSPORT	111381	276.6	80.9	0.3	0.3	3.9	2.1	NA		NA		NA		NA	
USRN17832	PA:DALLAS	111981	1579.0	123.9	-0.1	0.9	2.1	2.1	NA		NA		NA		NA	
USRN17747	PA:DOVER	111881	1485.5	81.8	2.9	0.8	0.8	0.5	NA		NA		NA		NA	
USRN17038	PA:DOYLESTOWN	101681	2001.0	100.0	0.5	0.6	2.5	1.1	NA		NA		NA		NA	
USRN17100X	PA:DUQUESNE	102381	141.2	72.4	0.7	1.2	3.7	2.6	NA		NA		NA		NA	
USRN17100	PA:DUQUESNE	102381	122.5	84.4	-0.8	1.1	4.6	2.3	NA		NA		NA		NA	
USRN17162	PA:EDGEWORTH	102781	212.4	64.8	0.2	0.8	1.6	1.9	NA		NA		NA		NA	
USRN17159	PA:EDINBORO	102781	624.4	71.8	0.0	0.0	1.3	1.9	NA		NA		NA		NA	
USRN17799	PA:ELYSBURG	111981	68.4	99.9	-0.2	0.4	0.4	0.9	NA		NA		NA		NA	
USRN18566	PA:EMMAUS	121781	177.3	89.4	-0.1	0.5	1.6	1.5	NA		NA		NA		NA	
USRN18708	PA:ETNA	122881	263.6	62.8	-0.3	0.8	3.7	1.7	NA		NA		NA		NA	
USRN17697	PA:FAYETTEVILLE	111781	778.8	92.5	1.2	0.4	1.5	0.7	NA		NA		NA		NA	
USRN17687	PA:FLEETWOOD	111681	299.2	76.2	0.5	0.4	1.3	0.8	NA		NA		NA		NA	
USRN18086	PA:FORD CITY	12 281	522.1	78.3	0.2	0.7	1.7	1.7	NA		NA		NA		NA	
USRN18085	PA:FORD CITY	12 281	71.5	69.0	-0.4	1.3	3.0	3.9	NA		NA		NA		NA	
USRN18240X	PA:FRACKVILLE	121181	1958.5	117.5	0.1	0.3	0.5	0.8	NA		NA		NA		NA	
USRN18240	PA:FRACKVILLE	121181	1776.0	124.4	0.0	0.0	0.5	0.8	NA		NA		NA		NA	
USRN17994	PA:GALLITZIN	12 281	-5.6	113.9	0.0	0.0	1.1	0.9	NA		NA		NA		NA	
USRN20073	PA:GLENSHAW	1 582	245.5	62.4	-0.5	0.5	3.6	1.3	NA		NA		NA		NA	
USRN18138	PA:GREENCASTLE	12 981	446.7	69.2	-0.3	0.8	1.6	2.1	NA		NA		NA		NA	
USRN17250X	PA:GROVE CITY	103081	164.3	101.8	1.1	0.8	2.5	1.3	NA		NA		NA		NA	
USRN17250	PA:GROVE CITY	103081	210.5	118.3	1.2	0.8	2.6	1.6	NA		NA		NA		NA	
USRN17036	PA:HATBORO	102081	780.5	31.2	2.7	1.2	1.9	1.5	NA		NA		NA		NA	
USRN17034	PA:HATFIELD	102081	1298.0	38.9	8.6	2.3	0.5	0.4	0.6	0.0	NA		5.2	0.6	2.4	0.3
USRN16876	PA:HAWLEY	101481	1945.5	77.8	0.1	0.2	0.5	0.7	NA		NA		NA		NA	
USRN18238	PA:HAZELTON	121181	1581.5	110.7	0.0	0.2	0.1	0.6	NA		NA		NA		NA	
USRN18558	PA:HELLERTOWN	121681	716.6	114.3	0.2	0.5	2.0	1.1	NA		NA		NA		NA	
USRN17037	PA:HORSHAM	102081	777.7	31.1	2.2	1.3	1.6	1.2	NA		NA		NA		NA	
USRN18132	PA:INDIANA	12 881	10.4	71.0	0.8	1.1	4.7	2.3	NA		NA		NA		NA	
USRN17549	PA:KUTZTOWN	111081	267.0	64.1	0.8	0.9	1.6	1.7	NA		NA		NA		NA	
USRN17167	PA:LANDISVILLE	102681	379.6	64.5	1.7	1.2	1.4	1.5	NA		NA		NA		NA	
USRN17103	PA:LANSDALE	102481	857.2	72.5	8.5	2.2	0.0	0.0	0.1	0.0	NA		4.3	0.4	2.1	0.2
USRN17041	PA:LANSDALE	102181	3269.5	163.5	10.7	2.3	2.1	0.8	1.1	0.0	NA		5.3	0.6	3.7	0.4
USRN17102	PA:LEMONT	102281	357.4	92.8	0.6	1.0	4.6	2.2	NA		NA		NA		NA	
USRN17166	PA:LEOLA	102681	303.3	64.4	0.4	1.7	3.5	4.5	NA		NA		NA		NA	

Table B.26 Natural radioactivity in public groundwater systems-Pennsylvania (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN17798	PA:LIONVILLE	111981	173.9	101.8	0.1	0.4	1.4	0.8	NA		NA		NA		NA	
USRN17161	PA:LITITZ	102681	140.4	62.3	1.4	1.3	2.1	1.9	NA		NA		NA		NA	
USRN17249	PA:MALVERN	102981	1943.5	136.1	0.2	0.3	0.8	0.8	NA		NA		NA		NA	
USRN17551	PA:MALVERN	111281	1163.5	104.7	0.1	0.5	1.2	1.3	NA		NA		NA		NA	
USRN17550	PA:MALVERN	111281	407.1	112.8	0.5	0.5	0.5	0.8	NA		NA		NA		NA	
USRN17550X	PA:MALVERN	111281	417.7	96.7	-0.1	0.4	1.6	1.2	NA		NA		NA		NA	
USRN17951	PA:MARS	12 181	123.9	62.5	1.3	1.2	0.9	1.5	NA		NA		NA		NA	
USRN18131	PA:MEADVILLE	12 881	265.1	75.8	0.7	0.9	-0.1	0.1	NA		NA		NA		NA	
USRN17475	PA:MEYERSTOWN	11 981	235.8	77.1	0.5	0.5	1.3	1.0	NA		NA		NA		NA	
USRN17547	PA:MILLERSBURG	111281	2052.5	123.3	1.9	0.8	0.7	0.6	NA		NA		NA		NA	
USRN20001	PA:MONACA	123081	311.0	112.7	0.2	1.2	2.0	2.1	NA		NA		NA		NA	
USRN17428	PA:MONTOURSVILLE	11 281	672.2	79.9	0.1	0.3	0.8	0.8	NA		NA		NA		NA	
USRN17831	PA:MT. PENN	112381	476.1	68.9	0.2	0.5	1.4	0.9	NA		NA		NA		NA	
USRN17002	PA:NEWTOWN	101681	920.4	82.8	17.7	3.3	1.0	0.5	0.4	0.0	NA		9.6	1.1	2.9	0.4
USRN17402	PA:NORTH WALES	11 481	NA		6.9	1.7	1.4	0.7	1.6	0.0	NA		1.7	0.2	1.0	0.1
USRN17342	PA:OIL CITY	11 481	469.0	67.9	0.2	0.3	0.7	0.7	NA		NA		NA		NA	
USRN18242	PA:PALMERTON	121081	878.6	118.5	0.0	0.0	9.6	2.1	NA		NA		NA		NA	
USRN17101	PA:PENN STATE UNIV	102281	332.0	91.3	1.1	0.6	0.9	0.7	NA		NA		NA		NA	
USRN17035	PA:PENNSBURG	102081	144.2	28.8	0.7	0.5	1.4	0.9	NA		NA		NA		NA	
USRN16954	PA:PERKASIE	101481	1599.0	127.9	2.0	0.8	1.1	0.7	NA		NA		NA		NA	
USRN16959	PA:QUAKERTOWN	101481	2075.0	124.5	2.7	2.2	5.8	3.7	NA		NA		NA		NA	
USRN17907	PA:READING	112381	138.3	62.2	0.6	1.1	3.0	2.1	NA		NA		NA		NA	
USRN18129	PA:SAXONBURG	12 881	69.5	70.6	0.2	0.9	1.6	2.0	NA		NA		NA		NA	
USRN17164	PA:SEWICKLEY	102781	118.2	62.9	0.6	1.5	2.9	2.1	NA		NA		NA		NA	
USRN18525	PA:SHARPSBURG	121581	357.2	73.2	0.4	0.9	4.8	2.4	NA		NA		NA		NA	
USRN17499	PA:SINKING SPRINGS	111081	384.5	69.0	1.1	0.9	1.7	1.7	NA		NA		NA		NA	
USRN18565	PA:SLATINGTON	121781	197.2	88.8	-0.1	0.6	0.8	1.4	NA		NA		NA		NA	
USRN17952	PA:SLIPPERY ROCK	12 181	51.2	60.6	-0.6	1.3	4.7	2.4	NA		NA		NA		NA	
USRN18648	PA:SOUTH HEIGHTS	122381	583.8	116.8	-0.3	0.9	3.1	2.2	NA		NA		NA		NA	
USRN16956	PA:SOUTHAMPTON	101581	80.3	82.8	0.2	0.6	2.3	1.0	NA		NA		NA		NA	
USRN18526	PA:SPRINGDALE	121581	207.8	71.8	0.0	0.0	2.8	1.8	NA		NA		NA		NA	
USRN18241	PA:SUMMIT HILL	121081	1358.0	122.3	0.0	0.1	0.6	0.8	NA		NA		NA		NA	
USRN16957	PA:TELFORD	101481	1352.0	121.7	5.1	1.4	1.1	0.6	0.3	0.0	NA		3.7	0.4	2.3	0.3
USRN17165	PA:TITUSVILLE	102781	651.7	71.2	0.2	0.5	1.0	1.0	NA		NA		NA		NA	
USRN17199	PA:TRAPPE	102881	1343.0	80.6	3.5	1.1	0.3	0.3	0.2	0.0	NA		2.2	0.3	0.8	0.1
USRN17908	PA:W. BRADFORD	112381	2916.0	87.5	0.3	0.3	1.4	0.8	NA		NA		NA		NA	
USRN16955	PA:WARMINSTER	101581	1179.0	106.1	4.4	1.2	0.9	0.5	0.3	0.0	NA		3.1	0.3	1.7	0.2
USRN16952	PA:WARMINSTER	101581	2565.0	128.3	1.4	0.8	1.0	0.7	NA		NA		NA		NA	
USRN17548	PA:WARREN	111281	466.8	99.7	0.0	0.2	0.4	0.7	NA		NA		NA		NA	
USRN16953	PA:WARRINGTON	101581	4180.0	125.4	21.1	2.5	2.3	0.5	1.7	0.1	NA		11.7	1.3	7.0	0.8
USRN18239	PA:WEATHERLY	121081	1140.5	119.5	0.0	0.3	0.7	0.8	NA		NA		NA		NA	
USRN17163	PA:WEST VIEW	102781	153.7	61.8	-0.1	0.8	3.8	2.2	NA		NA		NA		NA	
USRN17746	PA:YORK	111881	2752.5	82.6	3.5	1.3	0.6	0.6	0.1	0.0	NA		3.0	0.4	1.0	0.1

Table B.27 Natural radioactivity in public groundwater systems-Rhode Island

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN03429	RI:COVENTRY	121780	1719.0	103.4	0.4	0.4	3.3	0.7	NA		NA		NA		NA	
USRN10176	RI:HARRISVILLE	11481	809.3	76.7	0.1	0.2	0.4	0.5	NA		NA		NA		NA	
USRN10175	RI:HARRISVILLE	11481	747.3	74.8	0.0	0.0	1.1	0.6	NA		NA		NA		NA	
USRN03236	RI:KINGSTON, SOUTH	112580	2255.0	90.2	0.2	0.2	1.6	0.4	NA		NA		NA		NA	
USRN03235	RI:KINGSTON, SOUTH	112580	3038.5	91.2	0.7	0.3	1.9	0.4	NA		NA		NA		NA	
USRN10180X	RI:KINGSTON, SOUTH	11581	1113.5	72.0	0.3	0.3	1.0	0.5	NA		NA		NA		NA	
USRN10180	RI:KINGSTON, SOUTH	11581	NA		0.4	0.4	1.1	0.6	NA		NA		NA		NA	
USRN11038	RI:LINCOLN	22581	415.4	89.3	0.1	0.5	2.0	0.6	NA		NA		NA		NA	
USRN11037	RI:LINCOLN	22581	845.4	97.0	0.3	0.4	2.0	0.7	NA		NA		NA		NA	
USRN11035	RI:LINCOLN	22581	830.9	95.4	0.0	0.0	4.0	0.8	NA		NA		NA		NA	
USRN11036	RI:LINCOLN	22581	312.8	89.1	0.1	0.3	2.5	0.7	NA		NA		NA		NA	
USRN11039	RI:LINCOLN	22581	924.6	96.8	0.1	0.5	3.0	0.7	NA		NA		NA		NA	
USRN10376	RI:NORTH KINGSTOWN	12781	1905.5	57.2	0.1	0.3	0.9	0.6	NA		NA		NA		NA	
USRN10372	RI:NORTH KINGSTOWN	12781	1294.5	64.7	0.2	0.3	1.0	0.5	NA		NA		NA		NA	
USRN10373	RI:NORTH KINGSTOWN	12781	1656.0	66.2	0.2	0.3	0.7	0.5	NA		NA		NA		NA	
USRN10377	RI:NORTH KINGSTOWN	12781	2394.5	71.9	1.1	0.5	1.9	0.6	NA		NA		NA		NA	
USRN10179	RI:NORTH KINGSTOWN	11581	118.9	62.0	0.5	0.4	1.1	0.5	NA		NA		NA		NA	
USRN10371	RI:NORTH KINGSTOWN	12781	1455.0	58.2	0.2	0.3	1.1	0.6	NA		NA		NA		NA	
USRN10177	RI:PASCOAG	11481	565.7	79.2	0.0	0.0	1.4	0.6	NA		NA		NA		NA	
USRN10178	RI:PASCOAG	11481	1175.0	82.4	0.1	0.5	1.2	0.6	NA		NA		NA		NA	
USRN03237	RI:WAKEFIELD	112580	1948.5	97.5	0.6	0.4	1.8	0.4	NA		NA		NA		NA	
USRN10192	RI:WARWICK	11281	2605.0	117.2	0.2	0.4	1.8	0.6	NA		NA		NA		NA	
USRN10375	RI:WARWICK	12781	2205.5	66.2	0.4	0.4	2.2	0.6	NA		NA		NA		NA	
USRN10374	RI:WARWICK	12731	2034.0	70.6	0.4	0.4	1.8	0.6	NA		NA		NA		NA	
USRN10191	RI:WARWICK	11281	3132.0	125.8	0.5	0.4	1.2	0.5	NA		NA		NA		NA	
USRN03431	RI:WEST GREENWICH	121780	1093.0	98.4	0.2	0.2	2.1	0.4	NA		NA		NA		NA	
USRN03419	RI:WEST GREENWICH	121780	930.4	97.7	3.9	0.9	3.2	0.6	0.1	0.0	NA		0.0	0.0	0.0	0.0
USRN03418	RI:WEST GREENWICH	121780	955.8	94.6	0.6	0.4	1.4	0.5	NA		NA		NA		NA	
USRN03428	RI:WESTERLY	121880	1161.5	87.0	0.0	0.2	0.0	0.0	NA		NA		NA		NA	
USRN03430	RI:WESTERLY	121880	NA		0.2	0.2	1.3	0.3	NA		NA		NA		NA	
USRN03430X	RI:WESTERLY	121880	958.5	85.6	NA		NA		NA		NA		NA		NA	
USRN03423	RI:WESTERLY	121880	1195.0	83.7	0.3	0.0	0.5	0.5	NA		NA		NA		NA	
USRN03424	RI:WESTERLY	121880	843.9	83.6	0.3	0.4	0.4	0.5	NA		NA		NA		NA	

Table B.23 Natural radioactivity in public groundwater systems-South Carolina

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15022	SC:AIKEN	72781	454.0	86.3	0.4	0.3	1.1	0.8	NA		NA		NA		NA	
USRN15026	SC:AIKEN	72781	216.3	82.1	0.6	0.3	1.6	0.8	NA		NA		NA		NA	
USRN15018	SC:ALLENDALE	72881	227.3	74.6	0.4	0.7	1.7	1.0	NA		NA		NA		NA	
USRN15339	SC:ANDREWS	8 381	98.2	77.3	0.2	0.6	2.1	1.1	NA		NA		NA		NA	
USRN14684	SC:BAMBERG	71481	-15.5	81.9	0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN23978	SC:BARNWELL	71982	339.0	81.4	0.4	0.3	1.1	0.7	NA		NA		NA		NA	
USRN15023	SC:BATH	72781	131.0	81.2	0.5	0.6	1.3	0.9	NA		NA		NA		NA	
USRN15019	SC:BATH	72781	150.3	81.6	0.6	0.5	-0.1	0.3	NA		NA		NA		NA	
USRN15028	SC:BEACH ISLAND	72781	196.3	82.8	0.5	0.3	1.9	0.9	NA		NA		NA		NA	
USRN15032	SC:BELVEDERE	72781	58.6	79.6	0.3	0.3	1.2	0.8	NA		NA		NA		NA	
USRN22796	SC:BENNETTSVILLE	52482	298.1	60.9	0.8	0.4	0.7	0.6	NA		NA		NA		NA	
USRN22321	SC:BISHOPVILLE	42782	381.8	63.0	-0.5	0.3	0.2	0.4	NA		NA		NA		NA	
USRN23976	SC:BLACKVILLE	71982	341.1	80.1	13.4	1.2	0.2	0.0	0.4	0.0	NA		0.0	0.0	0.0	0.0
USRN22794	SC:BLENHEIM	52482	455.5	63.8	1.2	0.5	0.9	0.5	NA		NA		NA		NA	
USRN14685	SC:BOWMAN	71481	32.8	82.5	0.1	0.4	1.8	0.9	NA		NA		NA		NA	
USRN14681	SC:BRANCHVILLE	71481	34.8	83.0	0.3	0.4	2.3	1.0	NA		NA		NA		NA	
USRN15020	SC:BREEZY HILL	72781	182.5	181.2	0.2	0.2	0.2	0.5	NA		NA		NA		NA	
USRN15020X	SC:BREEZY HILL	72781	191.4	114.0	0.4	0.3	1.1	0.8	NA		NA		NA		NA	
USRN24098	SC:BUFFALO	72082	5653.0	113.2	16.7	2.9	7.4	1.5	1.3	0.0	NA		8.8	1.1	5.2	0.7
USRN15076	SC:BULLS BAY	72981	51.0	110.4	-1.0	1.9	0.0	0.0	NA		NA		NA		NA	
USRN15029	SC:BURNETTOWN	72781	79.5	80.1	0.2	0.3	1.9	0.9	NA		NA		NA		NA	
USRN15491	SC:CASSATT	81081	203.9	78.2	0.5	0.3	1.3	0.8	NA		NA		NA		NA	
USRN22795	SC:CHERAW	52482	52.2	56.4	0.1	0.4	2.5	1.0	NA		NA		NA		NA	
USRN24096	SC:CLIFTON	72082	75.5	64.5	0.0	0.0	1.2	0.8	NA		NA		NA		NA	
USRN22108	SC:CLOVER	42082	4092.0	81.8	10.2	1.7	7.0	1.1	1.4	0.0	NA		10.3	1.4	5.8	0.8
USRN22107	SC:CLOVER	42082	45.8	57.4	0.0	0.0	2.5	0.9	NA		NA		NA		NA	
USRN14503	SC:COLUMBIA	7 881	-126.5	56.7	0.2	0.5	1.3	0.9	NA		NA		NA		NA	
USRN14505	SC:COLUMBIA	7 881	943.8	75.5	0.7	0.5	1.8	0.8	NA		NA		NA		NA	
USRN14502	SC:COLUMBIA	7 881	722.9	68.5	0.3	0.2	1.9	0.9	NA		NA		NA		NA	
USRN15323	SC:CONWAY	8 481	118.1	71.2	1.3	2.6	3.4	3.7	NA		NA		NA		NA	
USRN15493	SC:DARLINGTON	81081	126.6	76.7	0.2	0.2	0.5	0.7	NA		NA		NA		NA	
USRN14682	SC:DENMARK	71481	210.7	86.3	0.4	0.3	1.6	0.8	NA		NA		NA		NA	
USRN22850	SC:DILLON	53182	157.8	61.6	3.1	0.6	3.3	0.8	NA		NA		0.0	0.0	0.0	0.0
USRN22850X	SC:DILLON	53182	152.2	58.1	2.9	0.6	3.7	0.8	1.7	0.0	NA		0.0	0.0	0.0	0.0
USRN14686	SC:ELLOREE	71481	105.1	83.5	1.2	0.6	2.5	1.0	NA		NA		NA		NA	
USRN15088	SC:ESTILL	72881	37.2	84.8	0.7	0.7	2.2	1.0	NA		NA		NA		NA	
USRN15027	SC:FAIRFAX	72881	73.9	86.2	0.2	0.3	2.4	1.0	NA		NA		NA		NA	
USRN22322	SC:FLORENCE	42782	-21.3	54.7	0.0	0.2	6.5	1.4	NA		NA		NA		NA	
USRN22106	SC:FORT MILL	42082	3618.0	108.5	0.2	0.4	1.7	0.9	NA		NA		NA		NA	
USRN15326	SC:GARDEN CITY	8 381	85.6	76.3	-0.7	2.3	8.8	5.0	NA		NA		NA		NA	
USRN14599	SC:GASTON	71381	262.8	61.7	1.3	0.4	1.0	0.6	NA		NA		NA		NA	
USRN15332	SC:GEORGETOWN	8 381	155.7	77.7	0.2	2.1	8.1	4.6	NA		NA		NA		NA	
USRN14504	SC:GILBERT	7 881	989.8	73.9	0.3	0.3	2.1	0.9	NA		NA		NA		NA	
USRN15024	SC:GLOVERVILLE	72781	18.6	56.1	0.2	0.3	1.7	0.9	NA		NA		NA		NA	
USRN15080X	SC:GOOSE CREEK	72981	-5.2	76.4	0.2	0.3	1.9	0.9	NA		NA		NA		NA	
USRN15080	SC:GOOSE CREEK	72981	45.7	97.5	1.3	0.6	1.0	0.6	NA		NA		NA		NA	
USRN24094	SC:GRAY COURT	72082	16135.0	161.4	0.4	0.3	1.9	0.9	NA		NA		NA		NA	
USRN15089	SC:HAMPTON	72881	154.7	86.8	0.4	0.6	3.2	1.1	NA		NA		NA		NA	
USRN15084	SC:HARDEEVILLE	72581	-24.2	143.8	0.4	0.5	2.1	0.9	NA		NA		NA		NA	
USRN15492	SC:HARTSVILLE	81081	252.1	78.2	0.2	0.3	0.7	0.7	NA		NA		NA		NA	
USRN15329	SC:HEMINGWAY	8 481	30.8	69.7	0.4	0.7	2.9	1.2	NA		NA		NA		NA	
USRN15079	SC:HILTON HEAD	72881	-17.0	83.3	0.4	0.5	1.7	0.9	NA		NA		NA		NA	
USRN14679	SC:HOLLY HILL	71481	131.5	85.2	0.3	0.5	7.5	1.4	NA		NA		NA		NA	

Table B.28 Natural radioactivity in public groundwater systems-South Carolina (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15021	SC:HOWLANDVILLE	72781	73.6	79.9	0.2	0.3	1.4	0.9	NA		NA		NA		NA	
USRN24097	SC:INMAN	72082	45.2	63.6	0.0	0.3	2.1	0.9	NA		NA		NA		NA	
USRN15081	SC:ISLE OF PALMS	72981	88.9	111.2	1.5	2.6	6.2	4.8	NA		NA		NA		NA	
USRN15017	SC:JACKSON	72781	394.5	85.3	1.7	0.5	1.1	0.6	NA		NA		NA		NA	
USRN15330X	SC:JOHNSONVILLE	8 481	42.2	69.5	0.6	0.6	3.3	1.1	NA		NA		NA		NA	
USRN15330	SC:JOHNSONVILLE	8 481	14.1	98.2	0.4	0.6	3.8	1.2	NA		NA		NA		NA	
USRN15340	SC:KINGSTREE	8 381	228.9	107.8	0.1	0.6	2.4	1.1	NA		NA		NA		NA	
USRN15340X	SC:KINGSTREE	8 381	190.8	78.6	0.4	0.7	3.3	1.2	NA		NA		NA		NA	
USRN15338	SC:LAKE CITY	8 481	138.2	76.5	0.1	0.3	1.5	0.9	NA		NA		NA		NA	
USRN15342	SC:LAKE VIEW	8 481	82.5	70.0	-0.2	0.5	2.5	1.0	NA		NA		NA		NA	
USRN15494	SC:LAMAR	81081	536.9	83.1	2.0	0.5	3.7	0.9	NA		NA		NA		NA	
USRN15033	SC:LANGLEY	72781	73.2	80.8	0.3	0.2	1.8	0.9	NA		NA		NA		NA	
USRN22851	SC:LATTA	53182	274.7	60.3	2.1	0.5	2.6	0.7	NA		NA		NA		NA	
USRN24093	SC:LAURENS	72082	39.4	63.2	0.2	0.3	1.9	0.9	NA		NA		NA		NA	
USRN14506	SC:LEESVILLE	7 881	236.4	64.3	2.7	0.7	3.5	0.9	NA		NA		NA		NA	
USRN14602	SC:LITTLE MOUNTAIN	71381	303.8	62.4	0.2	0.3	1.0	0.9	NA		NA		NA		NA	
USRN15324	SC:LORIS	8 481	74.6	70.1	0.3	0.7	6.2	1.5	NA		NA		NA		NA	
USRN14857	SC:MANNING	72081	150.4	62.4	0.3	0.5	1.9	0.9	NA		NA		NA		NA	
USRN15343	SC:MARION	8 481	221.2	73.0	0.2	0.5	1.9	1.0	NA		NA		NA		NA	
USRN15334	SC:MARION	8 481	1244.0	87.1	1.8	0.5	2.5	0.8	NA		NA		NA		NA	
USRN15490	SC:MCBEE	81081	189.9	81.6	0.3	0.3	1.2	0.8	NA		NA		NA		NA	
USRN15490X	SC:MCBEE	81081	240.3	78.2	0.3	0.3	1.4	0.8	NA		NA		NA		NA	
USRN22797	SC:MCCALL	52482	387.5	62.0	1.3	0.4	2.6	0.8	NA		NA		NA		NA	
USRN15091	SC:MONCKS CORNER	72981	132.1	111.6	0.3	0.5	11.7	1.6	NA		NA		NA		NA	
USRN15090X	SC:MT. PLEASANT	72981	32.5	109.1	0.3	2.3	3.3	4.7	NA		NA		NA		NA	
USRN15090	SC:MT. PLEASANT	72981	79.2	137.2	0.3	2.3	5.1	4.5	NA		NA		NA		NA	
USRN15331	SC:MULLINS	8 481	67.4	70.4	0.1	0.3	4.0	1.1	NA		NA		NA		NA	
USRN15325	SC:MURRELL'S INLET	8 381	133.6	77.9	1.5	2.6	8.1	4.4	NA		NA		NA		NA	
USRN15336	SC:MYRTLE BEACH	8 381	102.9	76.7	2.0	2.4	6.8	4.3	NA		NA		NA		NA	
USRN15333	SC:MYRTLE BEACH	8 481	72.1	75.1	1.6	2.9	8.1	4.7	NA		NA		NA		NA	
USRN15034	SC:NEW ELLENTON	72781	154.6	82.5	0.3	0.3	0.9	0.8	NA		NA		NA		NA	
USRN14680X	SC:NORTH	71481	331.8	87.6	5.9	1.0	2.0	0.6	5.5	0.1	NA		NA		NA	
USRN14680	SC:NORTH	71481	325.8	102.4	3.4	0.8	2.2	0.7	NA		3.9	1.2	0.1	0.0	0.1	0.0
USRN15341	SC:OUTLAND	8 381	117.0	77.4	-0.1	0.5	2.4	1.2	NA		NA		NA		NA	
USRN24159	SC:PACOLET MILLS	72082	45.3	63.6	NA		NA		NA		NA		NA		NA	
USRN15337	SC:PAMLICO	8 481	89.9	101.1	0.2	0.5	2.5	1.0	NA		NA		NA		NA	
USRN15322	SC:PAWLEY'S ISLAND	8 381	152.9	77.5	1.2	2.4	6.7	4.5	NA		NA		NA		NA	
USRN15078	SC:PINOPOLIS	72981	83.7	110.9	1.6	1.0	6.5	1.4	NA		NA		NA		NA	
USRN14600	SC:PROSPERITY	71381	3816.0	114.5	0.8	0.6	1.7	0.9	NA		NA		NA		NA	
USRN14600X	SC:PROSPERITY	71381	3882.5	116.5	0.7	0.5	2.1	0.9	NA		NA		NA		NA	
USRN15077	SC:RIDGELAND	72881	-35.6	81.7	1.4	0.7	0.9	0.7	NA		NA		NA		NA	
USRN15085	SC:SANGAREE	72981	17.0	109.6	0.5	0.7	4.8	1.3	NA		NA		NA		NA	
USRN15087	SC:SEABROOK	72881	137.1	91.8	0.3	0.4	3.1	1.0	NA		NA		NA		NA	
USRN14853	SC:SHAW AFB	72081	95.1	61.3	0.2	0.4	1.5	0.9	NA		NA		NA		NA	
USRN24095	SC:SPARTANBURG	72082	96.2	64.0	4.4	0.8	1.0	0.4	0.1	0.0	NA		0.0	0.0	0.0	0.0
USRN23977	SC:SPRINGFIELD	71982	314.8	79.4	0.1	0.2	1.6	0.8	NA		NA		NA		NA	
USRN14687	SC:ST. GEORGE	71481	258.2	86.5	0.3	0.4	2.3	0.9	NA		NA		NA		NA	
USRN14683	SC:ST. MATTHEWS	71481	500.0	89.7	0.2	0.3	1.3	0.9	NA		NA		NA		NA	
USRN15327	SC:ST. STEPHEN	8 381	54.3	77.0	0.3	0.8	1.4	1.0	NA		NA		NA		NA	
USRN15083	SC:SULLIVAN'S ISLA	72981	-13.0	108.5	0.6	2.6	5.6	4.6	NA		NA		NA		NA	
USRN14856	SC:SUMMERTON	72081	194.5	62.8	0.4	0.7	1.4	1.0	NA		NA		NA		NA	
USRN14855	SC:SUMTER	72081	65.9	60.2	0.0	0.4	4.5	1.2	NA		NA		NA		NA	
USRN14854	SC:SUMTER	72081	85.1	61.0	0.3	0.3	2.0	1.0	NA		NA		NA		NA	

Table B.28 Natural radioactivity in public groundwater systems-South Carolina (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15335	SC:SURFSIDE BEACH	8 381	33.8	75.9	2.1	2.2	3.7	3.5	NA		NA		NA		NA	
USRN14601	SC:SWANSEA	71381	303.9	62.3	0.2	0.4	0.7	0.2	NA		NA		NA		NA	
USRN15030	SC:TALATHA	72781	344.0	99.7	0.7	0.3	0.5	0.5	NA		NA		NA		NA	
USRN15030X	SC:TALATHA	72781	373.4	85.1	1.3	0.4	1.4	0.7	NA		NA		NA		NA	
USRN22323	SC:TIMMONSVILLE	42782	122.5	57.6	0.9	0.4	2.4	0.8	NA		NA		NA		NA	
USRN15082	SC:VARNVILLE	72881	222.7	89.0	1.5	0.9	2.3	1.0	NA		NA		NA		NA	
USRN15031	SC:WAGENER	72781	225.7	80.9	0.3	0.2	1.6	0.8	NA		NA		NA		NA	
USRN15086	SC:WATERBORO	72881	298.8	88.0	0.3	0.6	3.6	1.2	NA		NA		NA		NA	
USRN15025	SC:WILLISTON	72781	345.1	86.1	1.2	0.4	1.2	0.6	NA		NA		NA		NA	
USRN15328	SC:WINDJAMMER MHP	8 381	239.4	80.2	2.6	2.6	8.1	4.4	NA		NA		NA		NA	

Table B.29 Natural radioactivity in public groundwater systems-South Dakota

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN03378	SD:BELLE FOURCHE	121080	1633.0	81.7	2.2	1.0	1.9	0.6	NA		NA		NA		NA	
USRN10897	SD:BERESFORD	21881	65.2	72.3	3.0	1.3	4.0	0.9	NA		NA		NA		NA	
USRN03382	SD:BOX ELDER	121180	365.6	62.0	17.5	2.6	4.9	0.6	0.8	0.0	NA		10.0	0.9	3.5	0.4
USRN10860X	SD:BRANDON	21781	484.3	54.6	1.1	0.8	2.8	0.9	NA		NA		NA		NA	
USRN10860	SD:BRANDON	21781	NA		1.2	0.8	2.9	0.8	NA		NA		NA		NA	
USRN03397	SD:BROOKINGS	121580	78.8	44.3	1.1	1.1	0.9	0.6	NA		NA		NA		NA	
USRN03395	SD:BRYANT	121580	64.8	45.6	0.6	0.8	4.3	0.9	NA		NA		NA		NA	
USRN03437	SD:CANOVA	121780	1058.0	84.6	10.3	4.8	9.1	3.0	2.1	0.0	NA		2.3	0.2	1.5	0.2
USRN10857	SD:CANTON	21881	267.9	75.0	1.1	0.8	16.0	1.4	NA		NA		NA		NA	
USRN03188	SD:CLARK	112080	56.7	57.1	3.2	2.1	6.9	1.6	0.1	0.0	NA		NA		NA	
USRN03399	SD:CLEAR LAKE	121680	496.9	42.2	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN03308	SD:CUSTER	12 980	2653.0	79.7	3.0	1.7	3.2	3.1	0.4	0.0	NA		NA		NA	
USRN03396	SD:DE SMET	121580	240.9	46.7	2.0	3.5	14.6	3.9	0.1	0.0	NA		NA		NA	
USRN10854	SD:DELL RAPIDS	21781	1565.5	62.6	11.0	2.1	4.5	0.7	0.5	0.0	NA		12.4	1.2	4.4	0.5
USRN033[illegible]0	SD:EDGEMONT	12 980	NA		13.0	3.3	8.1	1.5	4.2	0.1	0.0	0.0	3.3	0.4	1.7	0.2
USRN033[illegible]0X	SD:EDGEMONT	12 980	408.6	60.1	13.0	3.3	9.3	1.5	NA		NA		NA		NA	
USRN10859	SD:ELK POINT	21881	211.3	74.0	0.0	0.0	13.0	3.9	NA		NA		NA		NA	
USRN03386	SD:ERWIN	121580	67.9	42.1	1.0	0.8	4.3	0.9	NA		NA		NA		NA	
USRN03186	SD:EUREKA	111780	357.3	57.2	1.5	0.9	9.4	1.2	NA		NA		NA		NA	
USRN03411	SD:FLANDREAU	121680	556.1	47.1	2.5	1.5	6.1	1.5	NA		NA		NA		NA	
USRN11151	SD:FREEMAN	3 381	261.6	51.0	0.0	0.0	15.0	4.1	NA		NA		NA		NA	
USRN10172	SD:FT. PIERRE	11581	1113.5	66.8	1.2	0.9	6.2	1.1	NA		NA		NA		NA	
USRN11159	SD:GREGORY	3 281	119.6	49.0	2.0	0.8	6.0	0.8	NA		NA		NA		NA	
USRN03187	SD:GROTON	111980	-105.8	70.9	0.4	2.9	12.2	3.9	NA		NA		NA		NA	
USRN10898	SD:HARTFORD	21981	276.3	58.6	0.3	2.3	5.0	3.3	NA		NA		NA		NA	
USRN03387	SD:HIGHMORE	121480	223.7	51.4	2.4	3.3	7.8	3.3	0.2	0.0	NA		NA		NA	
USRN03309	SD:HOT SPRINGS	12 980	-9.0	53.1	1.3	0.9	0.7	0.5	0.1	0.0	NA		NA		NA	
USRN03441	SD:HOWARD	121780	493.2	69.1	1.1	1.5	18.0	4.3	1.3	0.0	NA		NA		NA	
USRN03311	SD:IGLOO	12 980	80.9	52.2	14.0	3.5	18.0	2.2	4.8	0.1	0.5	0.8	4.4	0.5	2.8	0.3
USRN03267	SD:IPSWICH	111780	180.4	54.1	7.0	4.5	24.0	4.1	3.1	0.1	10.5	1.3	0.3	0.1	0.0	0.0
USRN11599	SD:LEMMON	32481	459.7	46.0	0.0	0.0	0.2	3.0	NA		NA		NA		NA	
USRN10858	SD:LENNOX	21881	90.7	68.4	1.7	3.6	6.4	3.6	NA		NA		NA		NA	
USRN03444	SD:MADISON	121780	144.3	73.7	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN03297	SD:MARTIN	12 880	217.8	47.5	4.3	1.2	10.1	1.6	0.1	0.0	NA		NA		NA	
USRN03388	SD:MILLER	121580	-0.8	42.1	0.0	0.0	25.0	4.5	NA		NA		NA		NA	
USRN10896	SD:MINNEHAHA	21981	53.9	65.0	0.3	0.6	1.8	0.7	NA		NA		NA		NA	
USRN10855	SD:NORTH SIOUX	21881	678.8	77.9	0.5	0.8	8.4	1.3	NA		NA		NA		NA	
USRN03243	SD:ORIENT	112080	318.2	58.8	9.8	5.2	13.2	3.5	2.0	0.1	NA		0.1	0.0	0.0	0.0
USRN11156	SD:PARKSTON	3 381	648.2	90.3	0.0	0.0	20.0	4.2	NA		NA		NA		NA	
USRN03380	SD:PHILLIP	121180	NA		6.1	3.6	14.7	3.7	4.2	0.1	0.5	0.7	0.1	0.0	0.1	0.0
USRN03380X	SD:PHILLIP	121180	556.8	58.4	9.9	5.3	22.2	4.0	NA		NA		NA		NA	
USRN03234	SD:PIERRE	112580	751.0	80.6	2.0	1.4	4.5	1.4	NA		NA		NA		NA	
USRN03299	SD:PINE RIDGE	12 880	296.9	47.3	7.2	1.8	14.2	1.7	0.1	0.0	NA		NA		NA	
USRN03381	SD:RAPID CITY	121080	268.0	73.0	10.7	5.1	8.2	2.7	1.8	0.1	NA		6.6	0.9	2.1	0.4
USRN03379	SD:RAPID CITY	121180	672.0	67.2	74.2	5.2	4.7	0.4	7.6	0.1	3.5	2.9	20.2	2.1	5.6	0.8
USRN03379A	SD:RAPID CITY	121180	509.8	58.6	NA		NA		NA		NA		NA		NA	
USRN03242	SD:REDFIELD	112080	27.8	55.7	2.1	4.2	9.8	4.2	0.6	0.0	NA		NA		NA	
USRN03268	SD:REDFIELD	112080	179.8	59.5	0.7	2.2	5.5	3.5	NA		NA		NA		NA	
USRN03298	SD:ROSEBUD	12 880	59.6	46.3	2.2	0.9	3.8	1.0	NA		NA		NA		NA	
USRN11157	SD:SALEM	3 381	610.5	88.4	3.0	3.7	11.0	3.5	2.3	0.0	NA		NA		NA	
USRN11152	SD:SCOTLAND	3 381	157.4	52.1	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN10895	SD:SIOUX FALLS	21981	101.9	62.2	0.0	0.0	0.0	0.0	NA		NA		NA		NA	
USRN03189	SD:SISSETON	111880	387.1	48.3	1.1	0.9	2.5	0.9	NA		NA		NA		NA	

Table B.29 Natural radioactivity in public groundwater systems—South Dakota (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN11153	SD:TYNDALL	3 281	263.6	61.6	3.0	1.6	6.0	1.5	0.2	0.0	NA		NA		NA	
USRN10856	SD:VERMILLION	21881	42.0	68.6	0.1	0.8	11.0	1.3	NA		NA		NA		NA	
USRN03400X	SD:VOLGA	121580	400.9	46.0	2.5	1.1	3.9	0.8	NA		NA		NA		NA	
USRN03400	SD:VOLGA	121580	NA		2.3	1.2	4.7	0.9	NA		NA		NA		NA	
USRN03190	SD:WEBSTER	111880	NA		0.0	0.0	10.8	2.0	NA		NA		NA		NA	
USRN03190X	SD:WEBSTER	111880	81.8	82.1	0.0	0.0	10.8	2.0	NA		NA		NA		NA	
USRN03438	SD:WENTWORTH	121680	226.8	75.8	2.1	0.8	3.1	0.5	NA		NA		NA		NA	
USRN03440	SD:WESSINGTON SPR	I121780	NA		3.7	2.3	12.8	1.9	0.1	0.0	NA		NA		NA	
USRN03440X	SD:WESSINGTON SPR	I121780	668.3	83.4	2.3	2.1	12.5	2.0	NA		NA		NA		NA	
USRN03398	SD:WHITE	121680	149.7	45.6	1.7	1.1	2.1	0.6	NA		NA		NA		NA	
USRN11146	SD:WINNER	3 281	115.5	51.0	3.0	1.0	6.0	0.9	NA		NA		NA		NA	
USRN11158	SD:WITTEN	3 281	142.4	49.7	2.0	0.7	4.5	0.8	NA		NA		NA		NA	

Table B.30 Natural radioactivity in public groundwater systems-Tennessee

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN24336	TN:ALAMO	72882	83.3	112.2	1.0	0.6	0.6	0.6	NA		NA		NA		NA	
USRN24249	TN:BARTLETT	72782	-58.3	65.9	0.5	0.4	1.5	0.8	NA		NA		NA		NA	
USRN24251	TN:BARTLETT	72782	-4.5	39.4	0.2	0.4	0.8	0.9	NA		NA		NA		NA	
USRN24198	TN:BOLIVAR	72682	40.9	69.9	0.8	0.7	4.3	1.1	NA		NA		NA		NA	
USRN24248	TN:BROWNSVILLE	72782	-5.1	67.2	0.3	0.3	1.0	4.3	NA		NA		NA		NA	
USRN24562	TN:CHATTANOOGA	8 582	211.0	104.2	0.1	0.5	1.5	0.9	NA		NA		NA		NA	
USRN24324	TN:COVINGTON	72782	9.4	67.6	1.1	0.5	2.9	1.0	NA		NA		NA		NA	
USRN24243	TN:COVINGTON	72782	-10.2	47.2	0.4	0.4	0.6	0.7	NA		NA		NA		NA	
USRN24561	TN:DECHERD	8 582	587.8	116.8	0.1	0.7	0.4	1.0	NA		NA		NA		NA	
USRN24325	TN:DRESDEN	72882	27.3	102.1	0.5	0.3	0.5	0.6	NA		NA		NA		NA	
USRN24246	TN:DYERSBURG	72882	-33.7	59.7	1.7	0.7	4.1	1.1	NA		NA		NA		NA	
USRN24247	TN:DYERSBURG	72882	3.1	60.9	0.8	0.5	2.9	0.9	NA		NA		NA		NA	
USRN25368	TN:EAGLEVILLE	91482	165.3	142.9	-0.5	0.8	4.6	2.6	NA		NA		NA		NA	
USRN24961	TN:ELIZABETH	82482	210.6	71.1	0.6	0.4	1.6	0.8	NA		NA		NA		NA	
USRN24966	TN:ELIZABETHTON	82482	980.8	83.3	0.5	0.3	0.7	0.7	NA		NA		NA		NA	
USRN24965	TN:ERWIN	82482	208.1	70.7	0.4	0.4	0.9	1.0	NA		NA		NA		NA	
USRN24252	TN:HALLS	72782	-4.2	66.6	1.8	0.7	1.8	0.7	NA		NA		NA		NA	
USRN24199	TN:HENDERSON	72682	-1.7	65.6	0.0	0.2	0.8	0.8	NA		NA		NA		NA	
USRN24559	TN:HIXSON	8 682	23.8	89.4	0.2	0.4	1.1	4.8	NA		NA		NA		NA	
USRN25366	TN:HOENWALD	91682	694.1	111.1	0.4	0.3	0.4	0.5	NA		NA		NA		NA	
USRN24330	TN:HUMBOLDT	72882	-19.3	150.5	0.3	0.3	0.7	0.7	NA		NA		NA		NA	
USRN24330X	TN:HUMBOLDT	72882	85.0	102.5	0.4	0.3	0.8	0.7	NA		NA		NA		NA	
USRN24331	TN:HUNTINGDON	72882	32.5	102.3	0.6	0.3	0.2	0.5	NA		NA		NA		NA	
USRN24196	TN:JACKSON	72682	11.0	65.8	0.8	0.4	1.9	0.9	NA		NA		NA		NA	
USRN24195	TN:JACKSON	72782	24.8	55.5	2.1	0.8	3.4	1.0	0.1	0.0	NA		0.0	0.0	0.0	0.0
USRN24962	TN:JEFFERSON CITY	82582	33.3	108.4	1.9	1.4	1.0	1.3	NA		NA		NA		NA	
USRN25367	TN:LAFAYETTE	91582	164.1	117.7	0.4	0.4	1.4	0.8	NA		NA		NA		NA	
USRN24335	TN:MARTIN	72882	62.5	103.2	0.4	0.3	2.1	1.0	NA		NA		NA		NA	
USRN24332	TN:MCKINZIE	72882	62.1	102.4	0.4	0.3	1.1	0.8	NA		NA		NA		NA	
USRN24244	TN:MEMPHIS	72782	-37.0	67.0	0.1	0.3	1.2	0.8	NA		NA		NA		NA	
USRN24334	TN:MILAN	72882	46.4	101.9	0.8	0.4	0.5	0.6	NA		NA		NA		NA	
USRN24242	TN:MILLINGTON	72782	-33.4	66.9	10.3	1.8	6.4	1.3	3.6	0.1	6.1	1.0	0.1	0.0	0.1	0.0
USRN24253	TN:MILLINGTON	72782	3.4	67.9	0.6	0.6	1.6	0.9	NA		NA		NA		NA	
USRN24963	TN:MOUNTAIN CITY	82482	276.3	68.1	0.4	0.3	0.6	0.7	NA		NA		NA		NA	
USRN24964	TN:NEW TAZWELL	82582	-5.6	108.0	1.1	0.8	1.5	1.3	NA		NA		NA		NA	
USRN24328	TN:NEWBURN	72882	65.2	103.2	0.3	0.6	1.9	1.0	NA		NA		NA		NA	
USRN24960	TN:OLIVER SPRINGS	82582	273.0	119.9	NA		1.7	1.0	NA		NA		NA		NA	
USRN24960X	TN:OLIVER SPRINGS	82582	277.4	111.3	0.1	0.4	1.0	0.8	NA		NA		NA		NA	
USRN24327	TN:PARIS	72882	9.1	101.8	1.6	0.6	1.8	0.8	NA		NA		NA		NA	
USRN25369	TN:PIKEVILLE	91582	166.8	120.1	0.5	0.7	2.6	1.6	NA		NA		NA		NA	
USRN24250	TN:RIPLEY	72782	17.7	70.7	1.3	0.6	2.6	0.9	NA		NA		NA		NA	
USRN24250X	TN:RIPLEY	72782	-17.8	66.6	1.6	0.7	2.4	1.0	NA		NA		NA		NA	
USRN24245	TN:RIPLEY	72782	3.4	66.9	3.3	1.4	4.3	1.5	0.9	0.0	NA		0.1	0.0	0.0	0.0
USRN24194	TN:SAVANNAH	72682	185.4	68.5	0.2	0.5	1.3	0.9	NA		NA		NA		NA	
USRN24200	TN:SEMLER	72682	113.7	73.7	1.0	0.9	6.5	1.9	NA		NA		NA		NA	
USRN24200X	TN:SEMLER	72682	119.8	67.7	1.2	1.0	4.2	1.5	NA		NA		NA		NA	
USRN24560	TN:SIGNAL MTN.	8 582	285.1	151.0	0.3	0.4	0.8	4.0	NA		NA		NA		NA	
USRN24560X	TN:SIGNAL MTN.	8 582	241.2	108.0	0.3	0.4	1.4	10.9	NA		NA		NA		NA	
USRN24326	TN:SO. FULTON	72882	28.6	102.2	1.0	0.4	5.7	1.3	NA		NA		NA		NA	
USRN24197	TN:SOMERVILLE	72682	46.3	66.4	1.4	0.5	3.2	0.9	NA		NA		NA		NA	
USRN25370	TN:TAFT	91482	163.6	144.7	0.3	0.4	0.3	0.6	NA		NA		NA		NA	
USRN25370X	TN:TAFT	91482	148.6	140.4	0.3	0.3	0.1	0.5	NA		NA		NA		NA	
USRN25934	TN:TRACY CITY	101282	-56.4	166.8	0.4	1.0	1.3	1.8	NA		NA		NA		NA	
USRN24333	TN:TRENTON	72882	33.7	101.9	0.6	0.5	1.1	0.8	NA		NA		NA		NA	
USRN24329	TN:UNION CITY	72882	-10.4	101.3	0.6	0.4	1.9	0.9	NA		NA		NA		NA	
USRN25365	TN:WOODBURY	91582	297.5	122.0	-0.2	0.7	0.2	2.0	NA		NA		NA		NA	

Table B.31 Natural radioactivity in public groundwater systems4Utah

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN15589	UT:ALPINE	81781	642.6	70.7	5.3	1.2	3.1	0.9	0.2	0.0	NA		3.0	0.4	2.9	0.4
USRN15593	UT:AMERICAN FORK	81781	163.9	63.1	2.8	1.1	1.1	0.7	NA		NA		NA		NA	
USRN21407	UT:BEAVER	31182	106.8	85.0	2.0	0.7	0.6	0.5	NA		NA		NA		NA	
USRN12941	UT:BEAVER	5 781	2436.5	121.9	17.5	2.2	4.0	0.9	0.1	0.0	NA		14.3	1.3	7.7	0.7
USRN11730X	UT:BOUNTIFUL	33181	995.7	49.8	5.0	1.4	2.0	0.6	0.1	0.0	NA		NA		NA	
USRN12336	UT:BOUNTIFUL	41781	286.7	78.1	1.1	0.8	2.0	0.8	NA		NA		NA		NA	
USRN11730	UT:BOUNTIFUL	33181	NA		4.0	1.2	2.0	0.6	NA		NA		3.5	0.3	2.1	0.2
USRN16459	UT:BRIGHAM	92981	553.0	79.5	1.6	0.8	1.9	1.0	NA		NA		NA		NA	
USRN12942	UT:CEDAR CITY	5 781	-20.1	61.5	0.7	0.6	2.2	0.9	NA		NA		NA		NA	
USRN12436	UT:CENTERVILLE	42181	9.3	62.0	0.5	0.6	2.0	1.0	NA		NA		NA		NA	
USRN13895	UT:CLEARFIELD	61681	191.6	63.0	2.2	1.0	1.6	0.9	NA		NA		NA		NA	
USRN13896	UT:CLINTON	61681	185.2	62.1	1.7	0.9	2.6	1.1	NA		NA		NA		NA	
USRN15035	UT:COPPERTON	72881	541.3	78.3	0.6	0.8	9.2	1.6	NA		NA		NA		NA	
USRN21380X	UT:DELTA CITY	31082	342.6	64.2	0.9	0.7	1.9	1.0	NA		NA		NA		NA	
USRN21380	UT:DELTA CITY	31082	308.9	64.7	1.0	0.8	2.7	1.2	NA		NA		NA		NA	
USRN12092	UT:DRAPER	41081	451.5	112.9	5.0	1.3	2.0	0.5	0.9	0.0	NA		2.4	0.3	0.7	0.1
USRN21564	UT:DUCHESNE	31582	35.0	169.3	1.3	1.2	0.2	0.6	NA		NA		NA		NA	
USRN21444	UT:DUCHESNE(UTE)	31582	358.1	60.7	1.8	1.0	2.3	1.3	NA		NA		NA		NA	
USRN11407	UT:DUGWAY PROV. GD	31781	300.1	43.5	2.0	2.3	4.0	2.7	NA		NA		NA		NA	
USRN13289	UT:EPHRAIM	52281	-10.8	100.9	0.5	0.5	1.2	0.8	NA		NA		NA		NA	
USRN12745	UT:FARMINGTON	5 181	971.7	87.5	1.1	0.7	2.1	0.9	NA		NA		NA		NA	
USRN21355	UT:FILLMORE	3 982	322.7	74.2	0.8	0.8	2.0	1.4	NA		NA		NA		NA	
USRN12743	UT:FRUIT HEIGHTS	5 181	216.9	71.4	1.3	0.7	2.1	0.9	NA		NA		NA		NA	
USRN16457	UT:GARLAND	92981	885.6	84.1	2.9	2.0	3.1	3.1	NA		NA		NA		NA	
USRN12238	UT:GRANGER	41481	314.0	84.8	4.0	3.0	7.0	4.3	0.1	0.0	NA		1.9	0.2	0.9	0.1
USRN13486	UT:GRANTSVILLE	6 181	555.0	85.9	4.5	1.7	4.2	1.6	0.3	0.0	NA		2.1	0.2	0.6	0.1
USRN13287	UT:GUNNISON	52181	44.8	119.0	1.1	0.8	3.3	1.3	NA		NA		NA		NA	
USRN17112	UT:HEBER CITY	102281	248.3	84.1	2.5	1.1	2.5	1.1	NA		NA		NA		NA	
USRN22798	UT:HELPER	52482	174.3	60.0	0.6	0.7	1.2	1.7	NA		NA		NA		NA	
USRN15590	UT:HIGHLAND	81781	706.5	74.1	8.0	1.6	0.8	0.3	0.1	0.0	NA		3.8	0.5	3.4	0.4
USRN15590X	UT:HIGHLAND	81781	605.2	69.4	10.1	1.7	1.4	0.4	NA		NA		NA		NA	
USRN12994	UT:HILL AFB	5 181	191.3	70.7	2.5	1.0	2.0	0.9	0.4	0.0	NA		1.8	0.2	1.1	0.1
USRN12215	UT:HOLLADAY	41381	284.3	69.3	0.3	0.8	2.0	1.0	NA		NA		NA		NA	
USRN15303	UT:HOOPER	8 481	187.6	76.0	1.4	0.7	1.2	0.8	NA		NA		NA		NA	
USRN12864	UT:HURRICANE	5 581	38.9	75.9	2.4	1.0	3.1	1.0	0.1	0.0	NA		4.1	0.4	1.7	0.2
USRN17196	UT:HYDE PARK	102881	217.7	148.1	0.8	0.8	-0.1	0.5	NA		NA		NA		NA	
USRN17174	UT:HYRUM	102781	335.1	75.4	2.1	1.4	1.2	1.4	NA		NA		NA		NA	
USRN12865	UT:KANAB	5 581	61.5	123.1	0.8	0.7	3.2	1.1	NA		NA		NA		NA	
USRN22799	UT:LAWRENCE	52482	292.5	58.5	0.7	1.4	2.7	2.0	NA		NA		NA		NA	
USRN12744	UT:LAYTON	5 181	277.3	73.9	1.8	0.8	1.9	0.8	NA		NA		NA		NA	
USRN16973	UT:LEHI	101481	-319.3	517.3	6.0	1.0	0.8	0.3	0.1	0.0	NA		2.4	0.3	2.3	0.3
USRN17197	UT:LEWISTON	102881	74.9	59.1	0.4	0.6	-0.1	0.3	NA		NA		NA		NA	
USRN15594	UT:LINDON	81781	572.5	68.2	2.3	1.0	1.0	0.7	NA		NA		NA		NA	
USRN17176	UT:LOGAN	102781	332.6	74.5	0.9	0.7	0.5	0.9	NA		NA		NA		NA	
USRN15092	UT:MAGNA	72981	351.7	109.3	4.0	4.0	30.0	6.9	0.1	0.0	NA		2.4	0.2	1.0	0.1
USRN13290	UT:MANTI	52281	35.0	124.6	0.2	0.4	1.4	0.9	NA		NA		NA		NA	
USRN13290X	UT:MANTI	52281	-7.2	101.1	0.7	0.7	1.0	0.9	NA		NA		NA		NA	
USRN21085	UT:MAPLETON	21982	147.6	73.8	0.7	0.6	0.1	0.5	NA		NA		NA		NA	
USRN12218	UT:MIDVALE	41381	357.2	71.3	3.0	1.0	2.0	0.8	1.5	0.0	NA		1.6	0.2	1.6	0.2
USRN21408	UT:MILFORD	31182	460.2	94.0	1.2	0.9	1.3	1.2	NA		NA		NA		NA	
USRN14144	UT:MOAB	62581	22.2	88.7	2.6	0.8	1.1	0.7	NA		NA		NA		NA	
USRN21140X	UT:MORGAN	22482	267.4	109.6	1.5	1.1	1.6	1.1	NA		NA		NA		NA	
USRN21140	UT:MORGAN	22482	250.6	145.4	1.5	0.9	0.7	1.1	NA		NA		NA		NA	

Table B.31 Natural radioactivity in public groundwater systems-Utah (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN13452	UT:MT. PLEASANT	52281	184.9	102.0	0.7	0.6	1.9	0.9	NA		NA		NA		NA	
USRN12091	UT:MURRAY	41081	384.3	111.3	2.0	0.8	2.0	0.7	NA		NA		NA		NA	
USRN11728	UT:N. SALT LAKE	33181	406.9	46.7	1.0	0.6	0.9	0.5	NA		NA		NA		NA	
USRN21228	UT:NEPHI	3 282	176.6	72.0	0.8	0.7	2.2	1.3	NA		NA		NA		NA	
USRN16634	UT:NO. LOGAN	10 281	161.4	78.0	0.2	0.5	0.3	0.8	NA		NA		NA		NA	
USRN15304	UT:OGDEN	8 481	315.6	78.3	0.3	0.7	4.6	1.2	NA		NA		NA		NA	
USRN15254	UT:OGDEN	8 481	796.8	135.0	0.5	0.6	1.5	0.9	NA		NA		NA		NA	
USRN15255	UT:OGDEN	8 481	828.9	439.6	0.0	0.0	1.2	0.9	NA		NA		NA		NA	
USRN16456	UT:OGDEN	92981	631.2	81.8	1.4	0.8	0.3	0.4	NA		NA		NA		NA	
USRN15592	UT:OREM	81781	452.5	67.6	1.6	0.8	2.0	0.9	NA		NA		NA		NA	
USRN12842	UT:PANGUITCH	5 581	327.3	78.4	0.5	0.4	2.3	0.9	NA		NA		NA		NA	
USRN21139	UT:PARK CITY	22582	1086.5	108.7	2.5	1.3	2.5	1.7	NA		NA		NA		NA	
USRN12943	UT:PAROWAN	5 781	182.9	91.4	1.5	0.7	2.9	0.9	NA		NA		NA		NA	
USRN21087	UT:PAYSON	21982	148.0	74.0	2.7	1.5	2.2	1.7	NA		NA		NA		NA	
USRN15591	UT:PLEASANT GROVE	81781	468.7	70.0	4.0	1.2	1.9	0.8	NA		NA		NA		NA	
USRN15256	UT:PLEASANT VIEW	8 481	334.6	76.8	0.7	0.4	0.4	0.2	NA		NA		NA		NA	
USRN17268	UT:PROVIDENCE CITY	102781	314.9	489.1	1.2	0.7	1.3	1.0	NA		NA		NA		NA	
USRN13288	UT:RICHFIELD	52181	227.4	124.4	1.0	0.7	2.0	0.9	NA		NA		NA		NA	
USRN17198	UT:RICHMOND	102881	31.0	57.9	0.7	0.4	0.6	0.6	NA		NA		NA		NA	
USRN17173	UT:RIVER HEIGHTS	102781	184.7	71.8	0.8	0.8	0.1	0.7	NA		NA		NA		NA	
USRN13897	UT:RIVERDALE	61681	241.1	63.9	1.1	0.7	1.5	0.9	NA		NA		NA		NA	
USRN12089	UT:RIVERTON	41081	482.9	80.7	1.0	1.9	8.0	3.0	NA		NA		NA		NA	
USRN21445	UT:ROOSEVELT	31582	379.2	73.9	1.8	1.1	1.5	1.1	NA		NA		NA		NA	
USRN14146	UT:ROY	61781	306.8	64.4	0.9	0.7	1.6	0.9	NA		NA		NA		NA	
USRN21086	UT:SALEM	21982	224.4	76.1	2.5	1.1	1.2	1.0	NA		NA		NA		NA	
USRN13291	UT:SALINA	52181	422.5	118.0	0.5	0.4	2.1	0.9	NA		NA		NA		NA	
USRN21406	UT:SALINA	31182	98.8	83.8	0.0	0.0	2.1	0.9	NA		NA		NA		NA	
USRN12217	UT:SALT LAKE CITY	41381	112.3	88.4	1.0	0.5	2.0	0.8	NA		NA		NA		NA	
USRN12216	UT:SALT LAKE CITY	41381	257.5	66.8	0.6	0.7	2.0	0.8	NA		NA		NA		NA	
USRN12090X	UT:SANDY	41081	711.9	81.8	2.0	0.7	2.0	0.6	NA		NA		NA		NA	
USRN12093	UT:SANDY	41081	646.5	80.6	3.0	0.9	4.0	0.8	0.1	0.0	NA		2.0	0.2	2.1	0.2
USRN12090	UT:SANDY	41081	761.2	158.4	2.0	0.7	2.0	0.5	NA		NA		NA		NA	
USRN21088	UT:SANTAQUIN	21982	513.8	77.3	0.7	0.9	1.8	1.3	NA		NA		NA		NA	
USRN17195	UT:SMITHFIELD	102881	190.2	61.5	0.5	0.6	1.8	1.5	NA		NA		NA		NA	
USRN14147	UT:SO. OGDEN	61781	35.6	60.4	0.7	0.8	2.3	1.1	NA		NA		NA		NA	
USRN12214	UT:SO. SALT LAKE	41381	136.2	68.0	0.9	0.8	2.0	0.8	NA		NA		NA		NA	
USRN14158	UT:SOUTH WEBER	61781	364.3	67.3	1.6	0.9	2.5	1.0	NA		NA		NA		NA	
USRN21083	UT:SPANISH FORK	21982	445.6	77.9	1.2	1.5	2.1	2.1	NA		NA		NA		NA	
USRN21084	UT:SPRINGVALE	21982	394.3	78.0	2.3	1.0	0.0	0.0	NA		NA		NA		NA	
USRN12863	UT:ST. GEORGE	5 681	-16.8	75.1	1.7	0.5	1.1	0.6	NA		NA		NA		NA	
USRN13898	UT:SUNSET	61681	156.9	61.5	3.5	1.1	1.0	0.6	NA		NA		NA		NA	
USRN12992	UT:SYRACUSE	51181	259.0	60.8	1.4	0.8	2.4	0.8	NA		NA		NA		NA	
USRN15093	UT:TAYLORSVILLE	72981	146.9	104.4	1.7	2.1	5.0	4.0	NA		NA		NA		NA	
USRN13485	UT:TOOELE	6 181	153.5	77.5	3.4	4.0	7.0	4.5	0.2	0.0	NA		2.6	0.3	0.8	0.1
USRN13484	UT:TOOELE	6 181	366.9	80.7	3.0	1.5	2.6	1.3	0.2	0.0	NA		2.4	0.2	0.6	0.1
USRN16683	UT:TREMONTON	92981	667.0	143.4	5.4	2.5	6.7	3.6	0.4	0.0	NA		2.2	0.2	1.1	0.1
USRN12866	UT:WASHINGTON	5 681	921.3	124.3	1.8	0.9	2.7	1.0	NA		NA		NA		NA	
USRN14145	UT:WASHINGTON TERR	61781	258.8	64.6	1.4	0.8	1.8	1.0	NA		NA		NA		NA	
USRN17175	UT:WELLSVILLE	102781	323.5	74.2	1.1	0.9	0.2	0.6	NA		NA		NA		NA	
USRN12993	UT:WEST POINT	51181	196.9	59.9	0.7	0.7	2.0	1.0	NA		NA		NA		NA	
USRN16458	UT:WILLARD	92981	728.8	80.2	4.8	1.0	0.7	0.3	0.1	0.0	NA		1.8	0.2	1.7	0.2
USRN11729	UT:WOODS CROSS	33181	907.8	49.6	2.0	0.9	0.7	0.4	NA		NA		NA		NA	

Table 8.32 Natural radioactivity in public groundwater systems-Vermont

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN23142	VT:ARLINGTON	61182	396.0	75.2	0.5	0.4	0.8	0.7	NA		NA		NA		NA	
USRN21885	VT:BETHEL	4 682	841.3	84.1	0.3	0.5	1.3	[illegible]	NA		NA		NA		NA	
USRN25952	VT:CASTLETON	101982	650.0	68.1	0.6	0.5	1.3	0.8	NA		NA		NA		NA	
USRN15912	VT:HARDWICK	9 181	388.6	79.6	0.3	0.7	1.7	0.9	NA		NA		NA		NA	
USRN23407	VT:LUDLOW	62282	773.6	69.6	0.0	0.3	1.1	0.8	NA		NA		NA		NA	
USRN21472	VT:LYNDONVILLE	31582	1317.0	79.0	1.2	0.8	2.9	1.2	NA		NA		NA		NA	
USRN15908	VT:MORRISVILLE	9 181	628.0	81.7	0.1	0.4	0.6	0.8	NA		NA		NA		NA	
USRN23459	VT:PITTSFORD	62582	227.1	76.1	0.4	0.4	0.8	0.7	NA		NA		NA		NA	
USRN22132	VT:QUECHEE	41982	621.5	86.5	4.3	1.0	1.6	0.6	1.0	0.2	NA		0.0	0.0	0.0	0.0
USRN21716	VT:RANDOLPH	33182	329.6	98.9	0.1	0.3	0.9	0.8	NA		NA		NA		NA	
USRN21886	VT:WINDSOR	4 882	624.0	93.6	0.3	0.5	1.4	1.0	NA		NA		NA		NA	

Table B.33 Natural radioactivity in public groundwater systems-Virginia

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14056	VA:ALEXANDRIA	62381	303.3	64.8	0.4	0.7	2.5	1.1	NA		NA		NA		NA	
USRN12640	VA:ALTAVISTA	42781	NA		0.0	0.0	3.0	1.1	NA		NA		NA		NA	
USRN11839	VA:ALTAVISTA	33181	2012.5	100.7	1.0	0.4	4.0	0.7	NA		NA		NA		NA	
USRN12640X	VA:ALTAVISTA	42781	2475.5	99.0	0.7	0.5	1.0	0.6	NA		NA		NA		NA	
USRN11841	VA:APPOMATTOX	33181	1956.5	97.8	1.0	0.4	2.0	0.6	NA		NA		NA		NA	
USRN22720	VA:AVONDALE	51382	219.9	96.7	0.2	0.9	6.8	1.6	NA		NA		NA		NA	
USRN22720X	VA:AVONDALE	51382	306.8	89.0	0.2	0.7	9.0	1.7	NA		NA		NA		NA	
USRN14711	VA:BOWLING GREEN	71581	216.9	77.0	0.4	0.5	2.4	1.1	NA		NA		NA		NA	
USRN23501	VA:BOYKINS	63082	226.6	61.8	0.3	0.7	12.5	2.0	NA		NA		NA		NA	
USRN22743	VA:BOYKINS	52082	113.7	85.9	1.3	0.8	14.9	2.0	0.5	0.0	NA		NA		NA	
USRN23506	VA:BOYKINS	63082	154.4	60.2	1.6	1.6	5.5	4.5	NA		NA		NA		NA	
USRN12338	VA:BRACEY	4 881	1255.0	181.8	0.2	0.4	4.0	1.2	NA		NA		NA		NA	
USRN22744	VA:BRANCHVILLE	52082	187.8	83.1	-0.2	0.8	7.2	1.6	NA		NA		NA		NA	
USRN23406	VA:BUCHANAN	62482	148.3	86.4	0.3	0.4	1.6	0.9	NA		NA		NA		NA	
USRN12951	VA:BUENA VISTA	5 781	474.0	101.8	0.1	0.2	1.2	0.8	NA		NA		NA		NA	
USRN12351	VA:BURKEVILLE	41481	7890.5	236.7	0.3	0.5	1.0	0.6	NA		NA		NA		NA	
USRN24721	VA:CAPE CHARLES	81282	248.8	88.5	0.2	0.7	0.7	1.4	NA		NA		NA		NA	
USRN12350X	VA:CHASE CITY	41481	680.6	135.8	0.1	0.6	1.0	0.7	NA		NA		NA		NA	
USRN12350	VA:CHASE CITY	41481	497.5	154.1	0.2	0.4	0.2	0.7	NA		NA		NA		NA	
USRN24722	VA:CHESAPEAKE	81182	214.9	59.0	0.6	0.7	1.4	0.9	NA		NA		NA		NA	
USRN23216	VA:CHESAPEAKE	61582	279.6	61.4	0.7	0.7	0.9	0.9	NA		NA		NA		NA	
USRN13928	VA:CHILHOWIE	61781	331.0	66.2	0.1	0.3	1.2	0.9	NA		NA		NA		NA	
USRN24720	VA:CHINCOTEAGUE	81282	246.1	94.4	0.8	1.1	13.7	3.1	NA		NA		NA		NA	
USRN24720X	VA:CHINCOTEAGUE	81282	239.8	86.2	0.8	1.1	18.3	3.4	NA		0.2	0.5	NA		NA	
USRN12433	VA:COLLINSVILLE	41781	655.5	144.2	0.7	0.4	2.0	0.7	NA		NA		NA		NA	
USRN24261	VA:COLONIAL BEACH	72882	226.1	64.1	1.4	0.9	2.6	1.2	NA		NA		NA		NA	
USRN22036	VA:COURTLAND	41482	111.9	97.0	0.0	0.0	2.4	1.6	NA		NA		NA		NA	
USRN13336	VA:DAHLGREN	51481	424.6	101.7	0.2	0.5	1.8	1.0	NA		NA		NA		NA	
USRN13335	VA:DAHLGREN	51481	207.4	97.3	0.5	0.6	1.8	1.0	NA		NA		NA		NA	
USRN13800	VA:DANTE	61281	179.1	89.7	-0.3	0.5	0.3	1.2	NA		NA		NA		NA	
USRN13800X	VA:DANTE	61281	152.3	78.5	-0.2	0.3	0.3	1.1	NA		NA		NA		NA	
USRN12949	VA:ELKTON	5 481	188.4	170.9	0.2	0.4	0.8	0.8	NA		NA		NA		NA	
USRN24547	VA:FAIRLAWN	8 382	21.4	67.1	-0.2	0.2	0.8	0.9	NA		NA		NA		NA	
USRN12472	VA:FERRUM	42181	293.6	88.1	0.2	0.3	4.0	1.3	NA		NA		NA		NA	
USRN12087	VA:FORK UNION	4 981	4743.5	142.3	1.0	0.4	1.0	0.4	NA		NA		NA		NA	
USRN17833	VA:FRANKLIN	112381	184.9	64.2	0.4	0.7	1.7	0.9	NA		NA		NA		NA	
USRN12932	VA:GLASGOW	5 781	109.9	97.2	0.2	0.5	1.4	0.9	NA		NA		NA		NA	
USRN24110X	VA:GLOUCESTER	72282	255.8	90.2	1.8	0.8	1.9	0.8	NA		NA		0.0	0.0	0.0	0.0
USRN24110	VA:GLOUCESTER	72282	355.9	97.6	3.4	1.0	2.3	0.8	0.9	0.0	NA		0.0	0.0	0.0	0.0
USRN24108	VA:GLOUCESTER	72282	207.0	89.5	2.2	4.7	7.4	7.1	NA		NA		NA		NA	
USRN12946	VA:GROTTOES	5 481	120.7	165.4	0.0	0.3	1.9	0.9	NA		NA		NA		NA	
USRN13799	VA:GRUNDY	61281	-13.8	75.1	0.1	0.7	2.0	1.1	NA		NA		NA		NA	
USRN13798	VA:HONAKER	61281	480.5	86.5	-0.4	0.5	1.7	1.1	NA		NA		NA		NA	
USRN12948	VA:HOT SPRINGS	5 681	10.9	114.7	0.0	0.0	1.2	0.9	NA		NA		NA		NA	
USRN14044	VA:INDEPENDENCE	62381	342.8	65.1	0.2	0.3	0.8	0.9	NA		NA		NA		NA	
USRN22721	VA:IRVINGTON	51882	152.3	71.5	0.0	0.0	1.6	2.1	NA		NA		NA		NA	
USRN14220X	VA:JONESVILLE	62981	114.8	72.5	0.4	0.5	0.7	0.9	NA		NA		NA		NA	
USRN14220	VA:JONESVILLE	62981	81.6	75.2	0.4	0.5	1.1	0.9	NA		NA		NA		NA	
USRN24107	VA:KILMARNOCK	72282	236.4	90.3	0.6	1.5	3.9	2.3	NA		NA		NA		NA	
USRN12275	VA:LA CROSSE	4 881	650.2	165.7	0.0	0.0	4.0	1.1	NA		NA		NA		NA	
USRN13855	VA:LANEXA	61581	276.2	66.2	0.0	0.0	4.6	1.3	NA		NA		NA		NA	
USRN12430	VA:LAUREL PARK	41781	2053.0	184.8	0.4	0.3	2.0	0.9	NA		NA		NA		NA	
USRN12430X	VA:LAUREL PARK	41781	2098.5	168.0	0.1	0.2	2.0	0.9	NA		NA		NA		NA	

Table B.33 Natural radioactivity in public groundwater systems—Virginia (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN14017	VA:LEBANON	61281	537.7	86.0	0.2	0.5	1.8	0.9	NA		NA		NA		NA	
USRN13150X	VA:LEESBURG	51581	247.7	81.0	0.0	0.0	1.2	0.9	NA		NA		NA		NA	
USRN13150	VA:LEESBURG	51581	261.8	93.2	0.1	0.5	1.0	0.8	NA		NA		NA		NA	
USRN13627	VA:LOCUST GROVE	6 481	NA		0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN13356	VA:LOUISA	52281	4543.0	136.7	-0.2	0.3	2.6	1.0	NA		NA		NA		NA	
USRN13697	VA:LOUISA	6 581	9195.0	183.9	0.2	0.3	2.2	0.9	NA		NA		NA		NA	
USRN11591	VA:LURAY	32581	14.0	51.9	0.1	0.4	2.0	0.8	NA		NA		NA		NA	
USRN13926	VA:MARION	61781	222.9	63.5	0.2	0.3	0.8	0.9	NA		NA		NA		NA	
USRN12432	VA:MARTINSVILLE	41781	705.1	150.9	0.2	0.4	2.0	0.8	NA		NA		NA		NA	
USRN22719	VA:MAYFIELD FARMS	51382	184.9	85.5	0.3	0.6	14.1	2.0	NA		NA		NA		NA	
USRN13802	VA:MCCLURE	61281	6.3	74.3	-0.6	0.4	1.4	1.0	NA		NA		NA		NA	
USRN13801	VA:MCCLURE	61281	-4.6	74.5	-0.6	0.4	0.5	0.9	NA		NA		NA		NA	
USRN23504	VA:MCKENNEY	63082	4712.5	188.8	0.0	0.0	1.1	0.9	NA		NA		NA		NA	
USRN23364	VA:MECHANICSVILLE	62282	238.3	76.2	0.4	0.6	8.6	1.4	NA		NA		NA		NA	
USRN13698	VA:MINERAL	6 581	928.5	102.1	0.2	0.3	8.9	1.4	NA		NA		NA		NA	
USRN12950X	VA:MONTEREY	5 681	NA		0.1	0.6	0.9	0.9	NA		NA		NA		NA	
USRN12950	VA:MONTEREY	5 681	NA		0.5	0.6	0.9	0.9	NA		NA		NA		NA	
USRN12608	VA:NEW CASTLE	42281	87.2	69.8	0.2	0.3	1.1	0.8	NA		NA		NA		NA	
USRN24724	VA:ONANCOCK	81282	341.0	88.8	0.4	0.6	5.6	1.3	NA		NA		NA		NA	
USRN24725	VA:PARKSLEY	81282	206.5	87.7	0.4	0.4	3.0	1.1	NA		NA		NA		NA	
USRN13219	VA:PEARISBURG	52081	31.7	60.2	0.0	0.0	1.8	1.0	NA		NA		NA		NA	
USRN13218	VA:PEMBROKE	52081	269.6	64.6	0.1	0.2	0.9	0.8	NA		NA		NA		NA	
USRN23515	VA:PETERSBURG	63082	313.4	63.9	1.0	0.7	5.2	1.4	NA		NA		NA		NA	
USRN24262	VA:POTOMAC SHORES	72882	145.8	58.1	0.2	0.8	2.0	1.4	NA		NA		NA		NA	
USRN22926	VA:PURCELLVILLE	52782	43.7	177.0	0.4	0.2	0.9	0.8	NA		NA		NA		NA	
USRN12607	VA:RAINBOW FOREST	42281	234.4	70.0	2.3	1.2	4.3	1.2	NA		NA		NA		NA	
USRN13217	VA:RICH CREEK	52081	130.7	62.0	0.8	0.6	1.5	1.0	NA		NA		NA		NA	
USRN18088	VA:RICHMOND	12 381	182.8	94.5	0.4	2.2	13.5	6.9	NA		NA		NA		NA	
USRN23365	VA:RICHMOND	62282	523.8	67.5	1.8	0.9	8.4	1.6	NA		NA		NA		NA	
USRN22585	VA:RICHMOND	51382	777.6	93.3	1.2	0.9	6.0	1.2	NA		NA		NA		NA	
USRN12431	VA:RIDGEWAY	41781	4975.0	199.0	5.0	1.0	6.0	1.1	3.7	0.1	1.0	0.8	2.3	0.2	1.5	0.2
USRN25231	VA:ROUND HILL	6 982	9.2	60.5	NA		NA		NA		NA		NA		NA	
USRN14043	VA:RURAL RETREAT	62381	213.8	63.1	0.2	0.3	1.7	0.9	NA		NA		NA		NA	
USRN23500	VA:SALEM	7 182	-2.8	112.7	0.3	0.5	1.3	0.8	NA		NA		NA		NA	
USRN23509	VA:SALEM	7 182	316.2	111.3	0.1	0.5	1.9	1.0	NA		NA		NA		NA	
USRN23502	VA:SALEM	7 182	964.0	120.4	0.2	0.8	2.9	1.5	NA		NA		NA		NA	
USRN23499	VA:SALEM	7 182	67.5	104.6	8.5	2.8	11.8	2.7	2.0	0.1	NA		0.5	0.1	0.1	0.0
USRN23508	VA:SALEM	7 182	650.2	116.6	1.7	0.8	4.3	1.2	1.1	0.0	NA		0.5	0.1	0.2	0.0
USRN23500X	VA:SALEM	7 182	75.4	105.5	0.2	0.5	0.6	0.8	NA		NA		NA		NA	
USRN23510X	VA:SALEM	7 182	547.9	115.1	0.6	0.5	1.2	0.8	NA		NA		NA		NA	
USRN23783	VA:SALEM	7 882	-1.0	81.8	0.3	0.4	2.2	0.9	NA		NA		NA		NA	
USRN23507	VA:SALEM	7 182	-52.5	102.0	0.3	1.2	2.4	2.1	NA		NA		NA		NA	
USRN23510	VA:SALEM	7 182	539.3	121.3	0.9	0.6	0.7	0.6	NA		NA		NA		NA	
USRN13927	VA:SALTVILLE	61781	316.1	66.4	0.7	0.7	1.9	1.1	NA		NA		NA		NA	
USRN17910	VA:SMITHFIELD	112381	166.1	67.7	0.0	0.0	4.2	2.3	NA		NA		NA		NA	
USRN17910X	VA:SMITHFIELD	112381	168.8	66.4	0.1	1.2	4.4	2.6	NA		NA		NA		NA	
USRN22718	VA:SPRING MEADOWS	51382	190.9	85.7	0.0	0.0	12.4	1.9	NA		NA		NA		NA	
USRN11592	VA:STANLEY	32581	138.0	38.6	0.2	0.4	2.0	0.6	NA		NA		NA		NA	
USRN12429	VA:STANLEYTOWN	41781	732.2	150.2	0.1	0.4	1.0	0.6	NA		NA		NA		NA	
USRN17800	VA:SUFFOLK	112381	206.7	66.1	-1.1	1.2	3.8	2.3	NA		NA		NA		NA	
USRN17800X	VA:SUFFOLK	112381	193.2	64.1	-1.3	1.1	3.0	2.7	NA		NA		NA		NA	
USRN14045	VA:SUGAR GROVE	62381	52.6	59.7	0.2	0.3	1.8	1.0	NA		NA		NA		NA	
USRN13856	VA:SURRY	61581	-1.7	71.7	0.2	0.6	2.2	1.3	NA		NA		NA		NA	

Table 8.33 Natural radioactivity in public groundwater systems-Virginia (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN24259	VA:TAPPAHANNOCK	72882	145.3	63.9	0.1	1.0	2.1	1.5	NA		NA		NA		NA	
USRN12945	VA:VERONA	5 481	-57.7	157.2	0.2	0.3	1.7	0.9	NA		NA		NA		NA	
USRN24723	VA:VIRGINIA BEACH	81182	379.7	62.6	-0.1	0.6	3.4	1.3	NA		NA		NA		NA	
USRN23215	VA:VIRGINIA BEACH	61582	368.1	76.4	0.6	0.7	2.2	1.1	NA		NA		NA		NA	
USRN23503	VA:WAKEFIELD	63082	214.6	62.3	0.1	0.6	6.3	1.5	NA		NA		NA		NA	
USRN24260	VA:WARSAW	72882	302.8	69.5	+0.3	1.7	3.8	2.2	NA		NA		NA		NA	
USRN24260X	VA:WARSAW	72882	235.5	65.1	0.2	1.1	4.4	2.4	NA		NA		NA		NA	
USRN23505	VA:WAVERLY	63082	172.5	62.7	1.7	0.9	7.7	1.6	0.5	0.0	NA		0.0	0.0	0.0	0.0
USRN12947	VA:WAYNESBORO	5 681	92.4	113.9	-0.1	0.2	1.7	1.0	NA		NA		NA		NA	
USRN24109	VA:WEST POINT	72282	230.7	90.7	0.4	1.7	6.6	2.7	NA		NA		NA		NA	
USRN17909	VA:WINDSOR	112381	203.4	65.0	0.7	1.2	4.7	2.4	NA		NA		NA		NA	
USRN12086	VA:WINTERGREEN	4 981	146.6	94.0	0.1	0.2	0.4	0.5	NA		NA		NA		NA	

Table B.34 Natural radioactivity in public groundwater systems-Wisconsin

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN18006	WI:ALGOMA	12 281	111.5	61.6	-0.1	0.8	1.7	2.6	0.3	0.0	NA		0.3	0.1	0.1	0.0
USRN18217	WI:AMERY	121081	1205.0	114.6	3.3	1.1	1.8	0.8	NA		NA		NA		NA	
USRN11917	WI:ANTIGO	4 681	208.2	52.0	0.2	0.6	2.0	0.8	NA		NA		NA		NA	
USRN12066	WI:BARABOO	4 981	269.5	120.9	2.0	0.9	2.0	0.6	NA		NA		NA		NA	
USRN18213	WI:BARRON	121181	454.8	88.7	2.9	1.0	3.6	1.0	NA		NA		NA		NA	
USRN12418	WI:BEAVER DAM	42081	107.4	88.3	0.2	0.3	1.0	0.6	NA		NA		NA		NA	
USRN12068	WI:BELOIT	4 981	127.4	118.8	0.2	0.6	5.0	1.0	NA		NA		NA		NA	
USRN12054	WI:BERLIN	41081	418.1	113.1	4.0	1.2	5.0	0.9	2.6	0.1	NA		1.9	0.2	0.3	0.1
USRN11988	WI:BLACK RIVER FAL	4 781	27.8	151.7	0.9	0.5	4.0	0.9	NA		NA		NA		NA	
USRN18207	WI:BLOOMER	121181	225.1	84.6	2.9	0.7	11.2	1.6	NA		NA		NA		NA	
USRN12376	WI:BONDUEL	42081	223.7	79.4	2.0	0.8	2.0	0.8	NA		NA		NA		NA	
USRN12075	WI:BRODHEAD	4 981	109.3	117.4	3.0	1.0	2.0	0.4	0.1	0.0	NA		1.7	0.2	0.3	0.1
USRN12428	WI:BURLINGTON	42181	46.9	77.8	6.0	1.4	7.0	1.3	2.0	0.0	NA		2.8	0.3	0.2	0.0
USRN11985	WI:CASSVILLE	4 881	126.8	38.7	0.6	0.8	2.0	1.1	NA		NA		NA		NA	
USRN12492	WI:CEDARBURG	42181	309.2	69.2	0.8	0.7	2.0	1.0	NA		NA		NA		NA	
USRN18233	WI:CHETEK	121181	572.5	88.6	0.1	0.3	0.9	0.9	NA		NA		NA		NA	
USRN12469	WI:CHILTON	42281	65.5	102.2	0.9	2.4	3.0	4.0	NA		NA		NA		NA	
USRN18211	WI:CHIPPEWA FALLS	121181	305.1	85.3	0.2	0.5	2.4	1.0	NA		NA		NA		NA	
USRN12377	WI:CLINTONVILLE	42081	597.5	86.6	4.0	1.3	2.0	0.6	0.4	0.0	NA		2.6	0.3	2.0	0.2
USRN18221	WI:COLFAX	121181	600.0	89.6	0.1	0.2	0.8	0.9	NA		NA		NA		NA	
USRN12056	WI:COLUMBUS	41081	145.9	106.1	1.0	0.8	1.0	0.6	NA		NA		NA		NA	
USRN18214	WI:CORNELL	121181	451.2	87.5	-0.1	0.4	1.3	0.9	NA		NA		NA		EA	
USRN11920	WI:CRANDON	4 681	145.8	68.8	0.2	0.6	2.0	0.8	NA		NA		NA		NA	
USRN11920X	WI:CRANDON	4 681	139.9	51.8	0.7	0.6	1.0	0.5	NA		NA		NA		NA	
USRN18004	WI:CRIVITZ	12 281	117.3	44.4	0.0	0.0	1.1	0.9	NA		NA		NA		NA	
USRN11987	WI:CUBA CITY	4 881	9.3	39.5	2.0	0.8	1.0	0.4	NA		NA		NA		NA	
USRN18224	WI:CUMBERLAND	121181	319.6	87.1	0.3	0.4	0.8	0.8	NA		NA		NA		NA	
USRN11992	WI:DARLINGTON	4 881	29.0	40.6	3.0	1.0	2.0	0.5	1.2	0.0	NA		0.8	0.1	0.1	0.0
USRN12427	WI:DELAVAN	42181	97.2	79.9	0.4	0.6	2.0	1.0	NA		NA		NA		NA	
USRN17999	WI:DEPERE	12 281	151.6	61.6	11.4	2.6	7.4	2.1	5.3	0.1	4.1	0.8	2.2	0.3	0.1	0.0
USRN11989	WI:DICKEYVILLE	4 881	96.1	39.4	0.4	0.6	1.0	0.6	NA		NA		NA		NA	
USRN12057	WI:DODGEVILLE	4 881	19.9	77.2	0.9	0.7	1.0	0.5	NA		NA		NA		NA	
USRN18218	WI:EAGLE RIVER	121081	126.6	105.9	0.2	0.3	0.4	0.7	NA		NA		NA		NA	
USRN18220X	WI:EAU CLAIRE	121181	392.2	86.1	0.3	0.3	1.9	1.0	NA		NA		NA		NA	
USRN18220	WI:EAU CLAIRE	121181	379.5	94.2	0.0	0.0	0.4	0.8	NA		NA		NA		NA	
USRN12069	WI:EDGERTON	41081	134.0	107.5	3.0	1.0	2.0	0.5	0.8	0.0	NA		2.5	0.3	0.3	0.1
USRN12412	WI:ELKHORN	42181	11.3	55.0	0.9	0.8	2.0	0.8	NA		NA		NA		NA	
USRN12050	WI:EVANSVILLE	4 981	128.4	172.5	3.0	1.2	5.0	1.0	NA		NA		1.8	0.2	0.4	0.1
USRN12050X	WI:EVANSVILLE	4 981	126.5	118.0	4.0	1.2	2.0	0.5	1.6	0.0	NA		NA		NA	
USRN11979	WI:FENNIMORE	4 881	47.4	44.5	1.0	0.7	1.0	0.5	NA		NA		NA		NA	
USRN18005	WI:FLORENCE	12 281	652.0	68.3	0.3	0.6	1.5	1.0	NA		NA		NA		NA	
USRN12468	WI:FOND DU LAC	42281	221.6	105.4	9.0	3.5	8.0	3.5	4.2	0.1	3.5	0.8	3.0	0.3	0.2	0.0
USRN12483	WI:FORT ATKINSON	42181	198.3	66.4	9.0	1.7	5.0	1.0	2.1	0.0	NA		1.5	0.2	0.2	0.0
USRN12417	WI:FRANKLIN	42181	217.1	80.9	5.0	1.4	7.0	1.3	1.4	0.0	NA		3.2	0.3	0.1	0.0
USRN18228	WI:FREDERIC	121081	272.8	91.3	0.3	0.5	0.7	0.7	NA		NA		NA		NA	
USRN12423	WI:GENOA CITY	42181	40.3	77.7	0.4	1.2	3.0	3.7	NA		NA		NA		NA	
USRN12493	WI:GRAFTON	42181	123.1	64.8	0.1	0.6	0.4	0.9	NA		NA		NA		NA	
USRN12425	WI:HARTFORD	42081	213.5	88.9	0.6	0.8	5.0	1.4	NA		NA		NA		NA	
USRN12420	WI:HARTLAND	42081	43.0	107.1	0.6	1.7	2.0	3.7	NA		NA		NA		NA	
USRN12420X	WI:HARTLAND	42081	62.6	86.4	1.1	1.5	1.0	2.2	NA		NA		NA		NA	
USRN18209	WI:HAYWARD	121081	241.7	90.2	1.8	0.7	1.3	0.8	NA		NA		NA		NA	
USRN12414	WI:HORICON	42081	249.3	89.5	3.0	0.9	2.0	0.9	2.6	0.1	0.3	0.8	1.1	0.1	0.1	0.0
USRN12381	WI:HORTONVILLE	42081	193.8	79.7	2.0	0.9	2.0	0.6	NA		NA		NA		NA	

Table B.34 Natural radioactivity in public groundwater systems-Wisconsin (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN18237	WI:HUDSON	121081	1107.5	105.0	7.2	1.7	5.7	1.6	3.7	0.1	0.8	0.7	0.6	0.1	0.3	0.1
USRN12063	WI:IOLA	41081	93.4	105.7	1.0	0.7	2.0	0.7	NA		NA		NA		NA	
USRN12076	WI:JANESVILLE	4 981	250.6	122.6	1.0	0.8	2.0	0.7	NA		NA		NA		NA	
USRN12491	WI:JEFFERSON	42181	295.5	68.0	6.0	1.3	4.0	0.9	3.4	0.1	NA		1.2	0.1	0.1	0.0
USRN12461	WI:KAUKAUNA	42281	412.5	107.3	7.0	3.5	8.0	4.6	5.2	0.1	3.5	0.9	1.4	0.2	0.1	0.0
USRN18000X	WI:KEWAUNEE	12 281	36.0	60.3	0.8	1.4	2.0	3.3	NA		NA		NA		NA	
USRN18000	WI:KEWAUNEE	12 281	66.7	71.0	0.4	1.4	2.5	3.6	NA		NA		NA		NA	
USRN17997	WI:KIEL	12 281	150.8	62.3	0.8	1.3	2.9	2.3	NA		NA		NA		NA	
USRN12467	WI:KIMBERLY	42281	243.8	104.9	3.0	2.3	3.0	3.6	0.9	0.0	NA		1.3	0.2	0.2	0.0
USRN12064	WI:LA CROSSE	4 981	183.4	115.4	0.2	0.5	2.0	0.8	NA		NA		NA		NA	
USRN12422	WI:LAKE GENEVA	42181	64.2	78.6	0.9	0.7	2.0	0.7	NA		NA		NA		NA	
USRN12487	WI:LAKE MILLS	42181	167.9	66.3	4.0	1.2	2.0	0.6	1.9	0.0	NA		2.3	0.3	0.3	0.1
USRN11990	WI:LANCASTER	4 881	29.7	50.6	0.8	0.8	2.0	0.8	NA		NA		NA		NA	
USRN11990X	WI:LANCASTER	4 881	48.1	38.3	1.0	0.8	1.0	0.4	NA		NA		NA		NA	
USRN12466	WI:LITTLE CHUTE	42281	241.6	106.0	3.0	1.8	2.0	3.0	0.4	0.0	NA		1.7	0.2	0.1	0.0
USRN12049	WI:MADISON	4 981	-55.1	113.6	2.0	0.8	1.0	0.4	NA		NA		NA		NA	
USRN12053	WI:MANAWA	41081	663.7	116.1	0.2	0.6	1.0	0.8	NA		NA		NA		NA	
USRN11918	WI:MARATHON	4 681	846.0	59.2	0.1	0.3	0.7	0.6	NA		NA		NA		NA	
USRN12052	WI:MARION	41081	1109.5	127.3	5.0	1.3	5.0	0.9	0.6	0.0	NA		4.0	0.4	3.4	0.4
USRN11984	WI:MARSHFIELD	4 781	1091.5	168.9	1.0	0.6	0.9	0.5	NA		NA		NA		NA	
USRN12073	WI:MAUSTON	4 981	204.7	120.6	0.0	0.3	1.0	0.4	NA		NA		NA		NA	
USRN12415	WI:MAYVILLE	42081	119.8	88.0	4.0	1.2	5.0	1.2	3.3	0.1	1.9	1.1	0.9	0.1	0.1	0.0
USRN18215	WI:MEDFORD	121181	396.1	86.6	-0.1	0.6	1.5	1.5	NA		NA		NA		NA	
USRN18225	WI:MELLEN	121081	417.7	92.7	0.5	0.6	1.1	1.0	NA		NA		NA		NA	
USRN18206	WI:MENOMINEE	121181	314.6	86.9	3.8	1.2	6.2	1.8	NA		NA		NA		NA	
USRN12484	WI:MENOMONEE FALLS	42181	90.0	64.5	6.0	1.6	7.0	1.3	2.5	0.1	NA		2.6	0.3	0.2	0.0
USRN18219	WI:MERRILL	121181	627.1	93.6	0.5	0.4	1.0	0.8	NA		NA		NA		NA	
USRN12051	WI:MIDDLETON	4 981	29.9	116.7	2.0	1.1	2.0	0.7	NA		NA		NA		NA	
USRN12067	WI:MILTON	41081	326.9	112.2	1.0	0.6	1.0	0.4	NA		NA		NA		NA	
USRN12065	WI:MINERAL POINT	4 881	-3.2	130.9	0.8	0.9	2.0	0.6	NA		NA		NA		NA	
USRN18235	WI:MINOCQUA	121081	239.6	92.3	0.2	0.6	1.6	1.0	NA		NA		NA		NA	
USRN12055	WI:MONONA	4 981	52.3	116.1	0.5	0.7	2.0	0.8	NA		NA		NA		NA	
USRN12070	WI:MONROE	4 981	16.8	170.8	3.0	1.0	2.0	0.7	0.9	0.0	NA		1.8	0.2	0.3	0.1
USRN12070X	WI:MONROE	4 981	28.6	117.1	2.0	0.8	2.0	0.6	NA		NA		NA		NA	
USRN12421	WI:MUKWONAGO	42081	276.4	90.2	7.0	1.5	4.0	0.8	4.6	0.1	3.3	1.1	1.3	0.2	0.1	0.0
USRN12077	WI:MUSCODA	4 881	105.1	130.1	0.8	0.7	4.0	0.8	NA		NA		NA		NA	
USRN12462	WI:NEW BERLIN	42181	130.7	115.0	4.0	1.2	7.0	1.5	3.9	0.1	3.3	0.8	1.8	0.2	0.2	0.0
USRN12464	WI:NEW HOLSTEIN	42281	111.3	102.5	0.9	0.8	0.0	0.0	NA		NA		NA		NA	
USRN12380	WI:NEW LONDON	42081	43.0	17.0	0.1	0.4	4.0	1.3	NA		NA		NA		NA	
USRN12380X	WI:NEW LONDON	42081	123.0	77.8	0.3	0.4	2.0	0.9	NA		NA		NA		NA	
USRN18216	WI:NEW RICHMOND	121081	542.3	94.8	1.7	0.8	1.3	0.8	NA		NA		NA		NA	
USRN18003	WI:NIAGARA	12 281	193.8	64.3	0.2	0.5	2.0	1.1	NA		NA		NA		NA	
USRN12378	WI:OCANTO FALLS	42081	317.6	81.4	2.0	0.8	4.0	1.2	NA		NA		NA		NA	
USRN12490	WI:OCONOMOWOC	42181	164.7	98.0	0.7	0.8	2.7	1.1	NA		NA		NA		NA	
USRN12490X	WI:OCONOMOWOC	42181	147.7	79.5	1.0	0.7	1.6	0.9	NA		NA		NA		NA	
USRN18002	WI:OCONTO	12 281	322.3	66.3	4.2	1.4	4.6	1.4	4.7	0.1	1.5	0.8	0.9	0.1	0.1	0.0
USRN12379	WI:OMRO	42081	772.7	88.7	3.0	1.2	2.0	0.9	0.2	0.0	NA		2.7	0.3	0.4	0.1
USRN12071	WI:ONALASKA	4 981	120.9	113.7	0.0	0.0	0.7	0.6	NA		NA		NA		NA	
USRN18234	WI:OSCEOLA	121081	854.2	98.1	1.4	0.7	0.5	0.6	NA		NA		NA		NA	
USRN18227	WI:OSSEO	121181	58.9	81.7	0.1	0.4	1.5	0.8	NA		NA		NA		NA	
USRN18230X	WI:PARK FALLS	121081	302.2	93.7	-0.1	0.4	0.3	1.0	NA		NA		NA		NA	
USRN18230	WI:PARK FALLS	121081	393.6	107.8	0.1	0.3	0.1	0.6	NA		NA		NA		NA	
USRN17996	WI:PESHTIGO	12 281	273.8	64.3	6.3	1.5	10.9	2.1	4.3	0.1	4.2	0.8	0.4	0.1	0.0	0.0

Table B.34 Natural radioactivity in public groundwater systems-Wisconsin (continued)

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN12488	WI:PEWAUKEE	42181	145.4	79.3	2.0	0.6	9.0	1.4	NA		NA		NA		NA	
USRN18232	WI:PHILLIPS	121081	671.8	113.7	0.0	0.4	0.9	0.8	NA		NA		NA		NA	
USRN11980	WI:PLATTEVILLE	4 881	57.0	53.2	4.0	1.1	2.0	0.4	NA		NA		0.9	0.1	0.1	0.0
USRN11980X	WI:PLATTEVILLE	4 881	67.6	39.7	6.0	1.5	2.0	0.7	2.4	0.0	NA		NA		NA	
USRN12470	WI:PLYMOUTH	42281	69.2	120.3	0.6	0.6	2.0	1.4	NA		NA		NA		NA	
USRN12470X	WI:PLYMOUTH	42281	73.9	102.1	0.5	0.6	2.0	1.2	NA		NA		NA		NA	
USRN12059	WI:PORTAGE	4 981	99.5	118.3	0.5	0.7	0.9	0.6	NA		NA		NA		NA	
USRN11983	WI:PRAIRIE DU CHIE	4 881	97.2	37.9	0.4	0.6	2.0	0.8	NA		NA		NA		NA	
USRN12465	WI:RANDOM LAKE	42181	78.5	122.4	2.0	2.8	8.0	4.6	NA		NA		NA		NA	
USRN12048	WI:REEDSBURG	4 981	86.5	129.7	0.4	0.5	1.0	0.4	NA		NA		NA		NA	
USRN18229	WI:RHINELANDER	121181	446.3	89.0	0.2	0.4	2.1	1.0	NA		NA		NA		NA	
USRN18212	WI:RICE LAKE	121181	487.9	87.5	0.1	0.3	1.3	0.8	NA		NA		NA		NA	
USRN12072	WI:RICHLAND CENTER	4 881	30.5	109.0	2.0	0.9	2.0	0.6	NA		NA		NA		NA	
USRN12426	WI:RIPON	42081	656.0	98.4	2.0	1.1	2.0	0.7	NA		NA		NA		NA	
USRN18223	WI:RIVER FALLS	121081	512.8	97.2	1.9	0.8	1.4	0.8	NA		NA		NA		NA	
USRN18001	WI:SEYMOUR	12 281	200.9	62.8	2.3	1.4	1.6	1.4	NA		NA		NA		NA	
USRN12382	WI:SHAWANO	42081	245.3	79.5	0.9	0.6	2.0	1.1	NA		NA		NA		NA	
USRN18231	WI:SHELL LAKE	121081	305.6	91.7	2.1	0.8	1.8	0.9	NA		NA		NA		NA	
USRN11986	WI:SHULLSBURG	4 881	85.4	43.3	1.0	0.6	0.8	0.5	NA		NA		NA		NA	
USRN11981	WI:SPARTA	4 881	581.9	151.0	0.5	0.4	1.0	0.4	NA		NA		NA		NA	
USRN18210	WI:SPOONER	121081	307.1	105.9	0.6	0.5	0.6	0.7	NA		NA		NA		NA	
USRN18210X	WI:SPOONER	121081	329.0	92.1	0.4	0.4	1.0	0.8	NA		NA		NA		NA	
USRN18222	WI:STANLEY	121181	1082.5	102.5	-0.2	0.8	1.6	1.4	NA		NA		NA		NA	
USRN11991	WI:STEVENS POINT	4 781	694.1	159.7	3.0	0.9	1.0	0.3	NA		NA		NA		NA	
USRN12062	WI:STOUGHTON	4 981	115.2	117.8	5.0	1.3	2.0	0.5	0.9	0.0	NA		1.1	0.2	0.1	0.0
USRN11982	WI:STRATFORD	4 681	1904.5	208.1	6.0	1.5	2.0	0.4	0.1	0.0	NA		4.5	0.4	2.3	0.2
USRN17998	WI:STURGEON BAY	12 281	161.4	62.8	1.1	1.1	-0.4	12.9	NA		NA		NA		NA	
USRN12058	WI:SUNPRAIRIE	41081	152.4	105.5	1.0	0.7	2.0	0.9	NA		NA		NA		NA	
USRN12486	WI:SUSSEX	42181	64.6	64.2	6.0	1.6	2.0	0.9	4.3	0.0	3.9	0.9	2.2	0.3	0.1	0.0
USRN18205	WI:THORP	121181	7499.5	150.0	2.0	0.9	1.2	0.8	NA		NA		NA		NA	
USRN12078	WI:TOMAH	4 881	833.7	142.7	2.0	0.6	4.0	0.7	NA		NA		NA		NA	
USRN18208	WI:TOMAHAWK	121181	624.0	93.6	3.0	0.7	5.1	1.0	NA		NA		NA		NA	
USRN12424	WI:UNION GROVE	42181	89.2	78.4	9.0	1.7	11.0	1.4	4.5	0.1	1.9	0.9	2.3	0.2	0.2	0.0
USRN12060X	WI:VIROQUA	4 881	181.1	138.4	6.0	1.3	1.0	0.3	0.7	0.0	NA		NA		NA	
USRN12060	WI:VIROQUA	4 881	116.2	215.8	5.0	1.1	1.0	0.3	NA		NA		7.0	0.7	2.2	0.2
USRN12416	WI:WALWORTH	42181	200.4	80.4	0.2	0.3	3.0	3.5	NA		NA		NA		NA	
USRN18236	WI:WASHBURN	121081	494.0	96.2	2.3	0.7	1.2	0.6	NA		NA		NA		NA	
USRN12489	WI:WATERTOWN	42181	232.4	67.3	2.0	0.9	2.0	0.7	NA		NA		NA		NA	
USRN12463	WI:WAUKESHA	42181	323.4	118.0	1.1	2.3	0.2	0.7	NA		NA		NA		NA	
USRN12061	WI:WAUPACA	41081	353.3	106.6	2.0	1.1	2.0	0.7	NA		NA		NA		NA	
USRN12413	WI:WAUPUN	42081	412.0	92.7	1.0	0.5	6.0	1.3	NA		NA		NA		NA	
USRN11919	WI:WAUSAU	4 681	58.2	50.7	0.0	0.3	1.0	0.4	NA		NA		NA		NA	
USRN12460X	WI:WEST BEND	42281	175.1	104.4	0.9	0.8	2.0	1.2	NA		NA		NA		NA	
USRN12460	WI:WEST BEND	42281	107.8	121.5	0.9	0.7	2.0	1.1	NA		NA		NA		NA	
USRN12074	WI:WEST SALEM	4 981	323.1	117.7	1.0	0.6	2.0	0.5	NA		NA		NA		NA	
USRN12485	WI:WHITE WATER	42181	166.8	64.6	3.0	1.3	5.0	1.5	2.3	0.0	NA		1.0	0.1	0.1	0.0
USRN18226	WI:WHITEHALL	121181	67.0	81.2	0.1	0.4	2.0	1.0	NA		NA		NA		NA	
USRN12419	WI:WILLIAMS BAY	42181	-11.4	77.3	0.2	0.4	2.0	0.9	NA		NA		NA		NA	
USRN11978	WI:WISCONSIN RAPID	4 781	128.5	150.4	1.0	0.3	0.3	0.3	NA		NA		NA		NA	

Table 8.35 Natural radioactivity in public water systems-Wyoming

EPA ID#	LOCATION	COLLECT DATE	Rn-222 (pCi/l)	2SIGMA ERROR	ALPHA (pCi/l)	2SIGMA ERR	BETA (pCi/l)	2SIG ERR	Ra-226 (pCi/l)	2SIGMA ERR	Ra-228 (pCi/l)	2SIGMA ERR	U-234 (pCi/l)	2SIGMA ERR	U-238 (pCi/l)	2SIGMA ERROR
USRN24312	WY:CASPER	73082	131.6	78.9	35.2	7.8	8.4	3.1	0.3	0.0	NA		20.0	2.3	11.6	1.3
USRN24898	WY:DUBOIS	82482	306.0	74.6	3.0	1.6	3.7	2.0	NA		NA		NA		NA	
USRN23829	WY:GILLETTE	71382	54.1	55.7	8.5	3.8	0.6	0.8	0.5	0.0	NA		3.3	0.4	2.1	0.3
USRN24631	WY:GLENROCK	8 582	307.9	107.3	5.9	4.1	0.6	1.4	0.4	0.0	NA		2.8	0.3	1.3	0.2
USRN24575	WY:JACKSON	8 882	556.4	89.0	0.8	0.9	1.2	1.0	NA		NA		NA		NA	
USRN25408	WY:JEFFREY CITY	91582	93.8	56.3	12.8	2.5	6.6	1.4	0.1	0.0	NA		13.6	1.5	8.8	1.0
USRN23676	WY:LUSK	7 882	379.5	90.5	11.2	2.6	7.2	2.0	0.1	0.0	NA		12.9	1.5	5.0	0.6
USRN23308	WY:LYMAN	61882	1428.0	85.7	15.9	3.0	2.3	0.9	0.1	0.0	NA		11.2	1.3	8.3	1.0
USRN24310X	WY:HILLS	73082	612.6	85.4	6.6	4.0	6.4	3.5	NA		NA		6.6	0.9	4.6	0.6
USRN24311	WY:HILLS	73082	600.5	83.6	4.5	2.1	4.2	2.0	0.2	0.0	NA		4.5	0.6	3.0	0.4
USRN24310	WY:HILLS	73082	538.8	110.4	10.6	4.4	0.6	0.8	0.1	0.0	NA		6.8	0.8	4.5	0.5
USRN23859	WY:MOORCROFT	71482	592.0	65.1	0.8	6.5	6.1	15.7	NA		NA		NA		NA	
USRN23675	WY:NEWCASTLE	7 782	114.2	98.2	6.7	2.5	2.4	1.3	2.9	0.1	0.0	0.0	3.1	0.4	1.0	0.1
USRN25078	WY:POWELL	9 282	278.9	114.1	6.0	2.4	2.5	1.6	0.1	0.0	NA		3.3	0.4	1.9	0.2
USRN24899	WY:RIVERTON	82582	938.9	70.3	0.2	0.7	0.9	1.9	NA		NA		NA		NA	
USRN23276*	WY:ROCK SPRINGS	61682	17.3	56.3	0.7	0.8	1.7	1.3	NA		NA		NA		NA	
USRN24897	WY:SHOSHONI	82482	1294.0	70.9	2.1	1.6	0.4	1.0	NA		NA		NA		NA	
USRN23860X	WY:SUNDANCE	71482	288.0	61.1	5.2	1.6	3.8	1.3	NA		NA		1.4	0.2	0.5	0.1
USRN23860	WY:SUNDANCE	71482	260.0	66.6	6.1	1.7	1.9	0.9	1.3	0.0	NA		1.3	0.2	0.5	0.1
USRN23632	WY:UPTON	7 782	155.6	59.1	3.8	2.0	1.9	1.9	0.9	0.0	NA		2.0	0.2	0.9	0.1

* Surface water supply; all others are groundwater supplies.

APPENDIX C

SUMMARY OF RADIOACTIVITY RESULTS FOR PUBLIC SURFACE WATER SYSTEMS

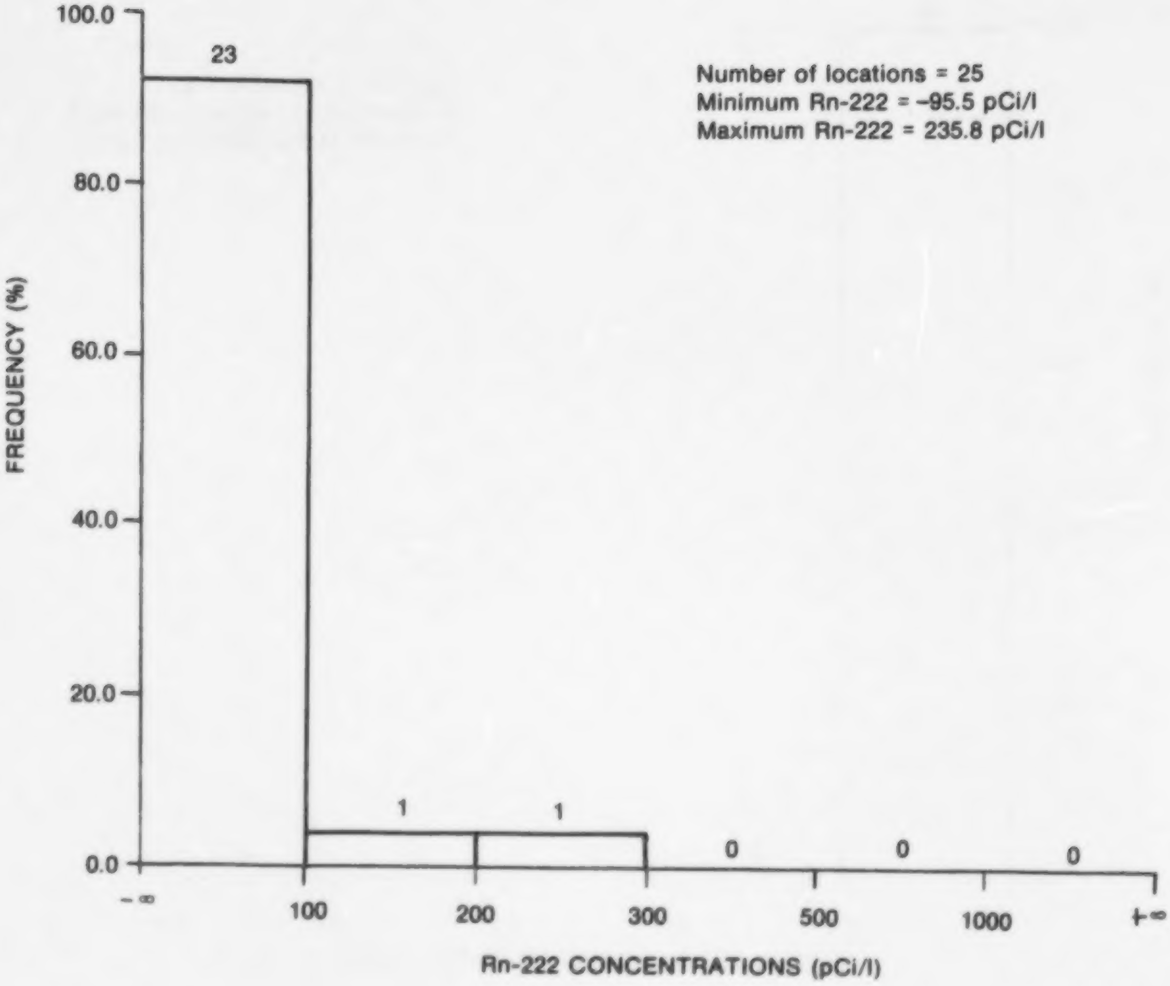


Figure C.1. U.S. public surface water systems: Rn-222 concentrations

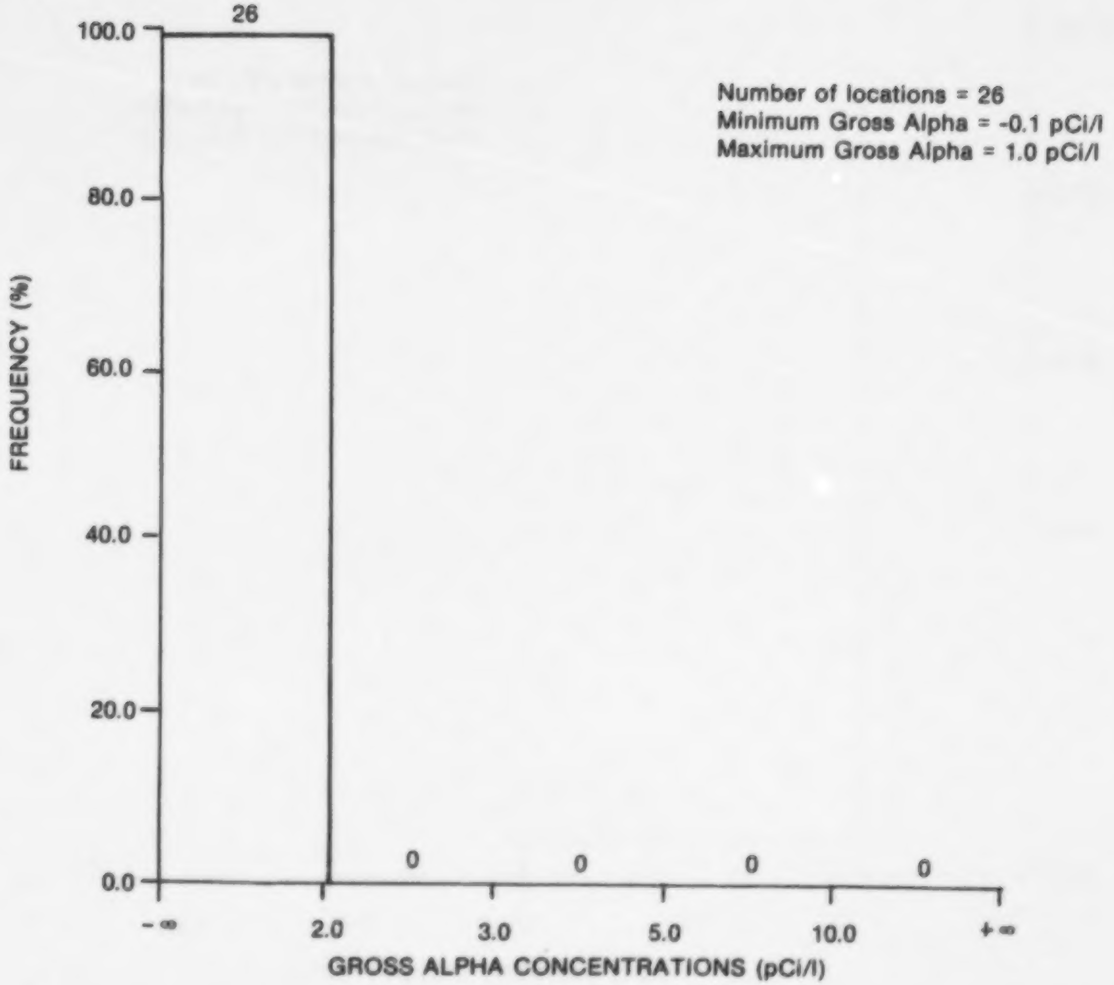


Figure C.2. U.S. public surface water systems: gross alpha concentrations

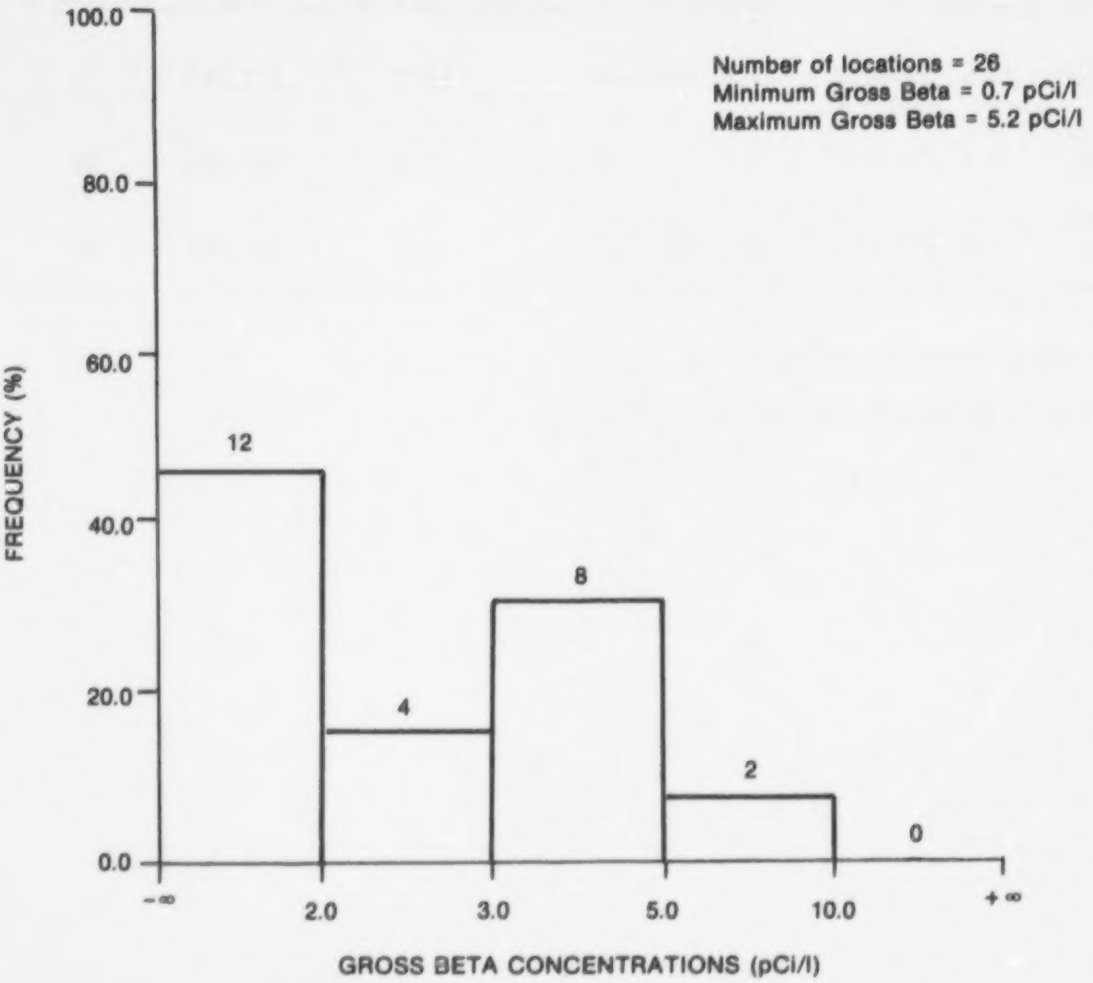


Figure C.3. U.S. public surface water systems: gross beta concentrations

Table C.1 Summary of U.S. radioactivity concentrations in public surface water systems

	Arithmetic Mean (pCi/l)		Geometric Mean (pCi/l)		Arithmetic Mean (Pop. Weighted)	Total Pop.	No. of Locations
Rn-222	33.6	SD=54.9	1.8	GD=56.4	18.5	172,669	25
Gross Alpha	0.2	SD= 0.2	0.1	GD= 4.8	0.3	180,969	26
Gross Beta	2.6	SD= 1.3	2.3	GD= 1.7	2.3	180,969	26

SD equals standard deviation.

GD equals geometric standard deviation.

APPENDIX D

SUMMARY OF Rn-222 CONCENTRATIONS FOR PUBLIC GROUNDWATER SYSTEMS FOR SELECTED POPULATION RANGES

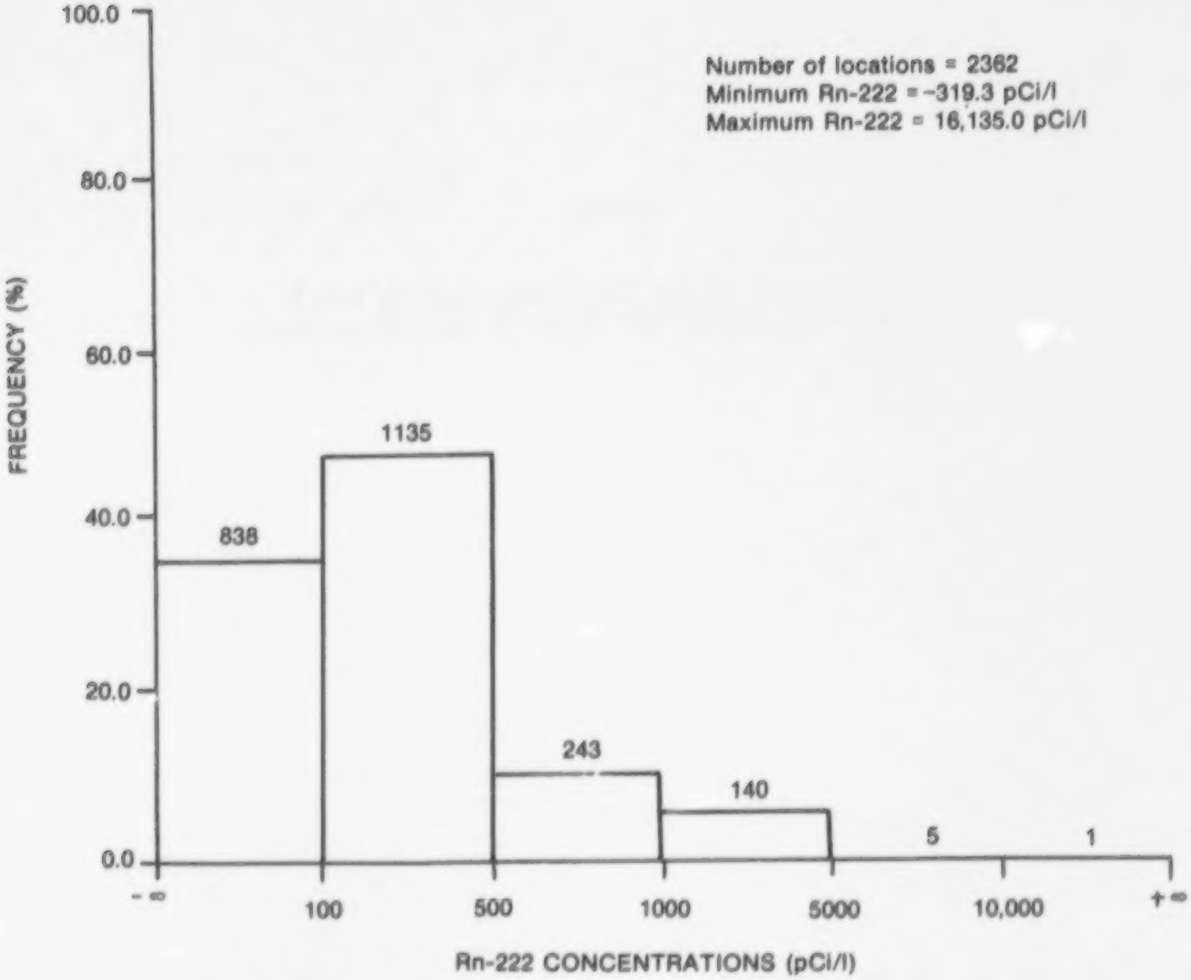


Figure D.1. Rn-222 concentrations in U.S. public groundwater systems serving 1000 or more people

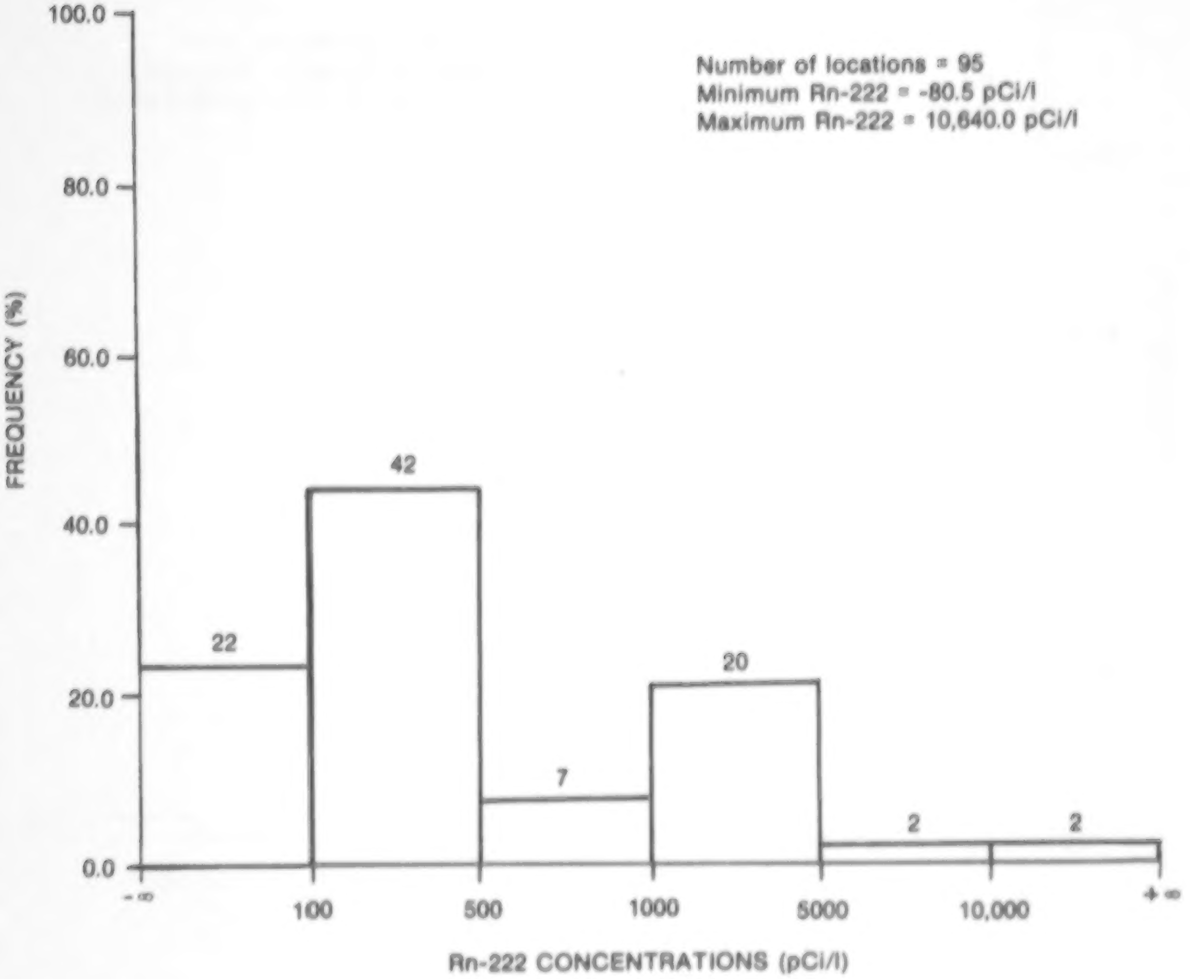


Figure D.2. Rn-222 concentrations in U.S. public groundwater systems serving less than 1000 people

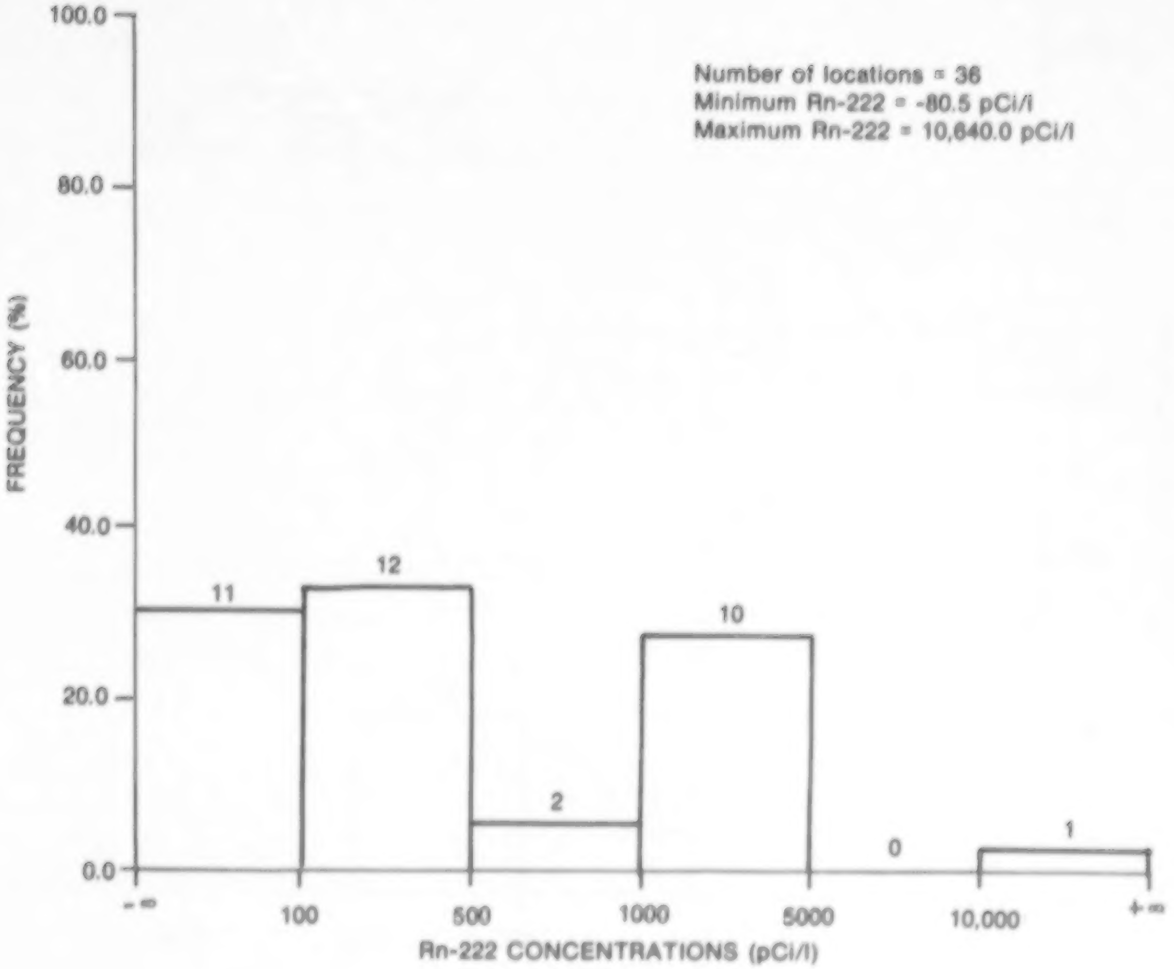


Figure D.3. Rn-222 concentrations in U.S. public groundwater systems serving less than 500 people

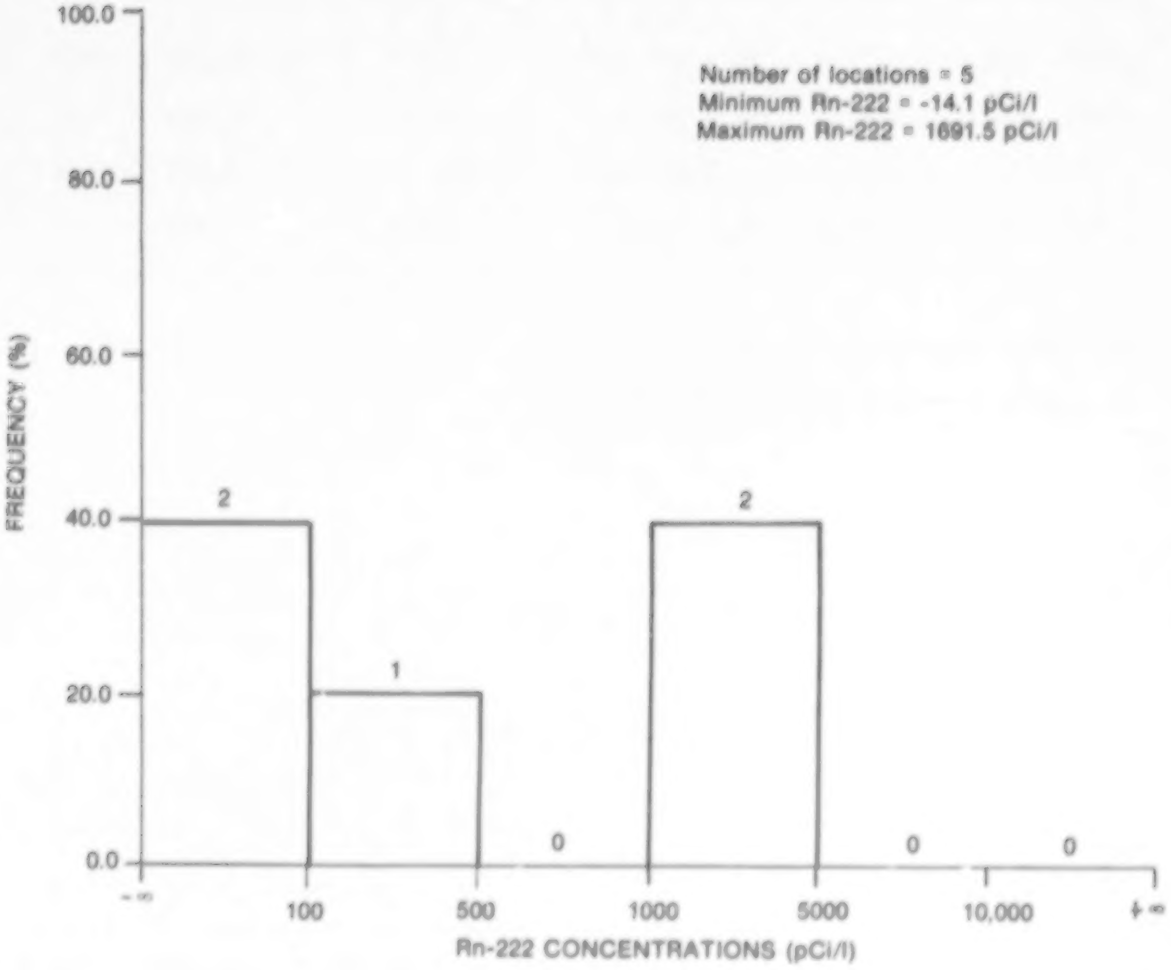


Figure D.4. Rn-222 concentrations in U.S. public groundwater systems serving less than 100 people

Table D.1 Summary of U.S. Rn-222 concentrations in public groundwater systems for selected population ranges

Pop. Range	Arithmetic Mean (pCi/l)	Geometric Mean (pCi/l)	Arithmetic Mean (Pop. Weighted)	Total Pop.	No. of Locations
>1000	326.3 SD= 634.8	84.4 GD= 16.2	230.7	30,794,806	2362
<1000	1012.1 SD=2047.1	162.7 GD= 22.1	1008.2	53,469	95
< 500	1022.9 SD=1984.4	118.5 GD= 38.8	1004.1	8,841	36
< 100	647.5 SD= 750.3	50.4 GD=142.4	518.2	216	5

SD equals standard deviation.

GD equals geometric standard deviation.

APPENDIX E

EPA REGIONAL CONTOUR MAPS FOR SELECTED RADIOACTIVITY CONCENTRATIONS

Figure E.1. Rn-222 concentrations in public groundwater
Region I 1981-1982

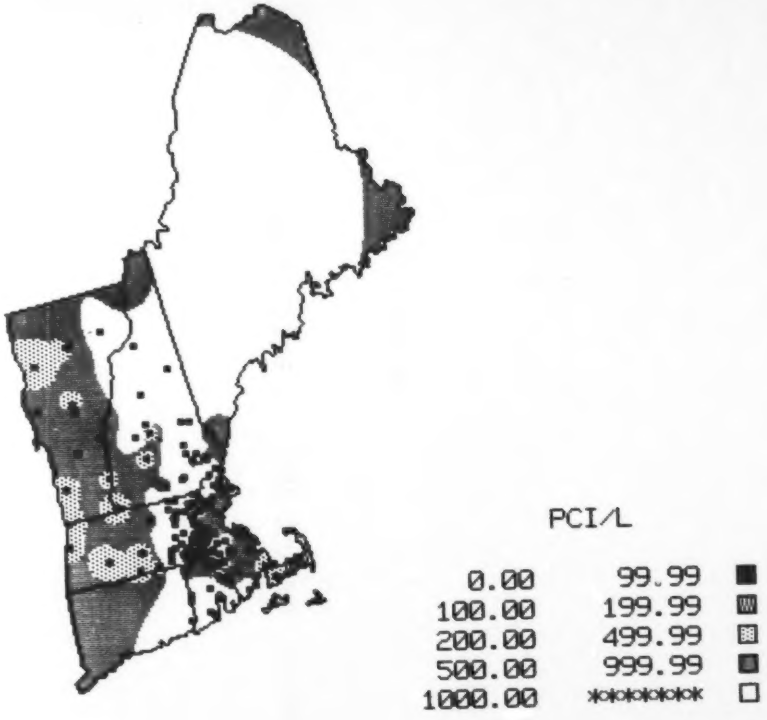

PCI/L
0.00 99.99 ■
100.00 199.99 ▥
200.00 499.99 ▦
500.00 999.99 ■
1000.00 ******* □

Figure E.2. Gross alpha concentrations in public groundwater
Region I 1981-1982

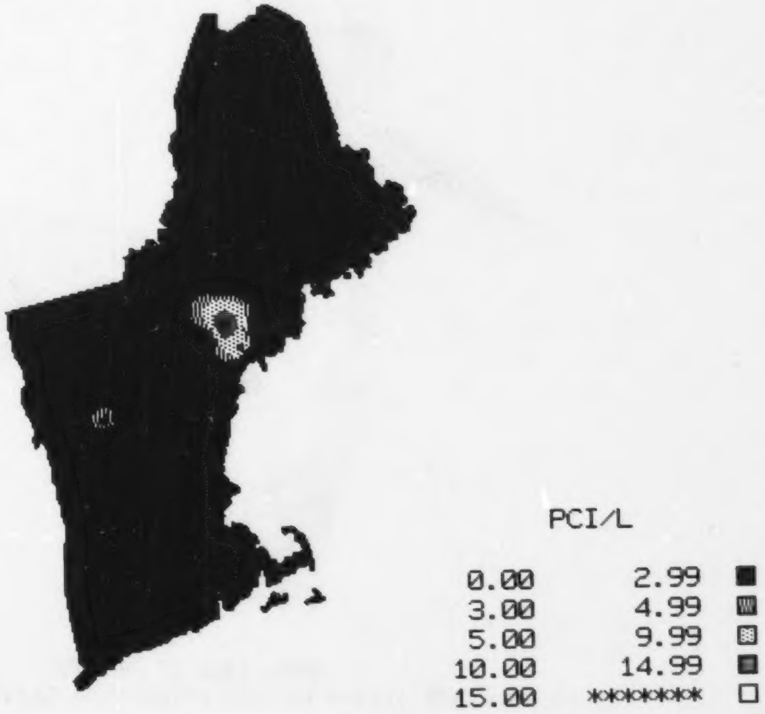

PCI/L
0.00 2.99 ■
3.00 4.99 ▥
5.00 9.99 ▨
10.00 14.99 ■
15.00 ******* □

Figure E.3. Rn-222 concentrations in public groundwater
Region II 1981-1982

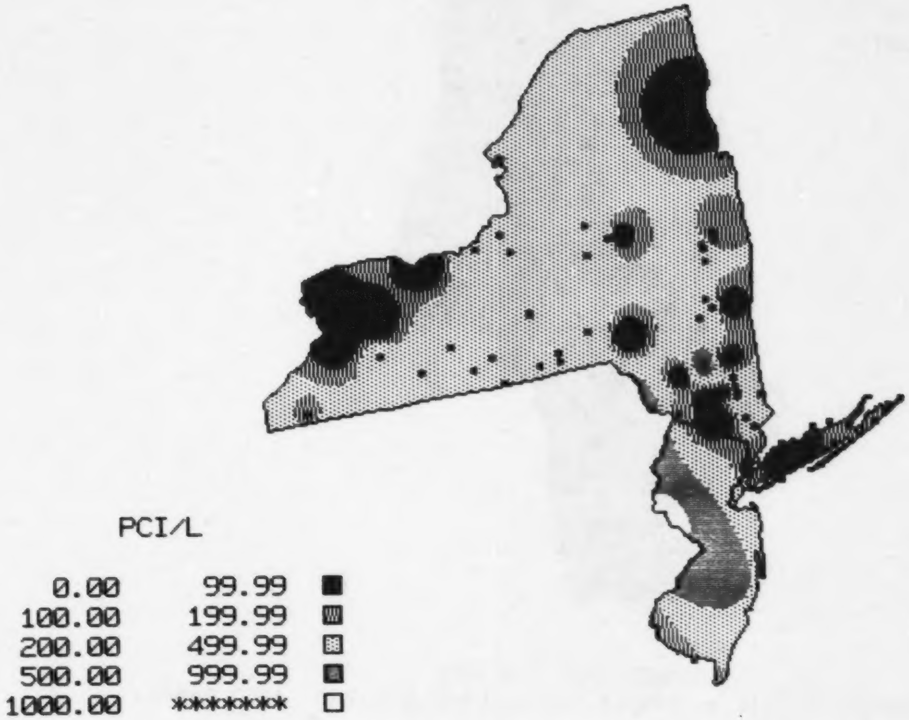

PCI/L
0.00 99.99 ■
100.00 199.99 ▥
200.00 499.99 ▦
500.00 999.99 ▩
1000.00 ******* □

Figure E.4. Gross alpha concentrations in public groundwater
Region II 1981-1982

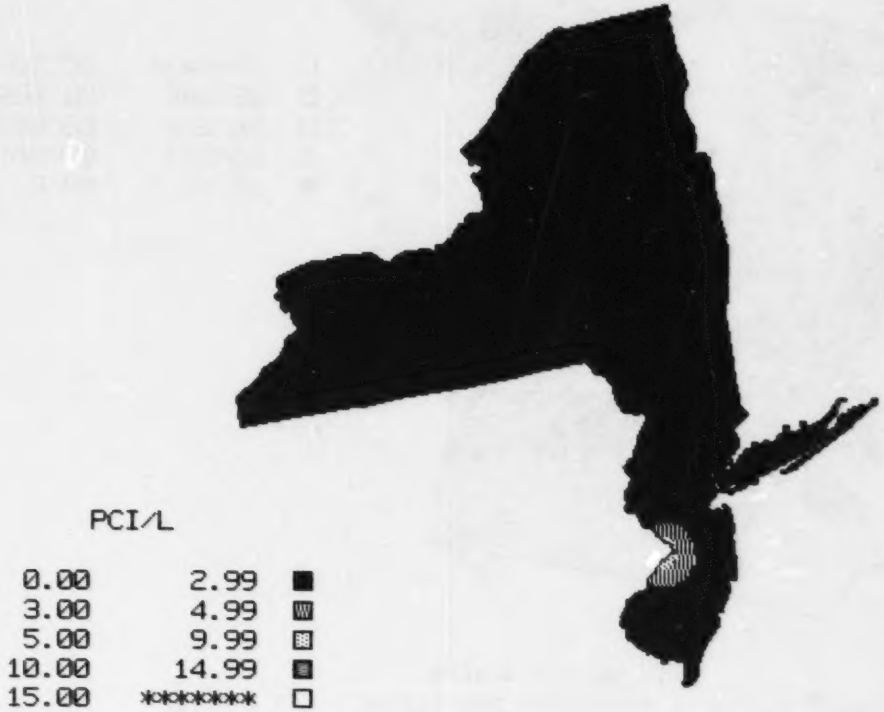

PCI/L
0.00 2.99 ■
3.00 4.99 ▥
5.00 9.99 ▩
10.00 14.99 ▣
15.00 ******* □

Figure E.5. Rn-222 concentrations in public groundwater
Region III 1981-1982

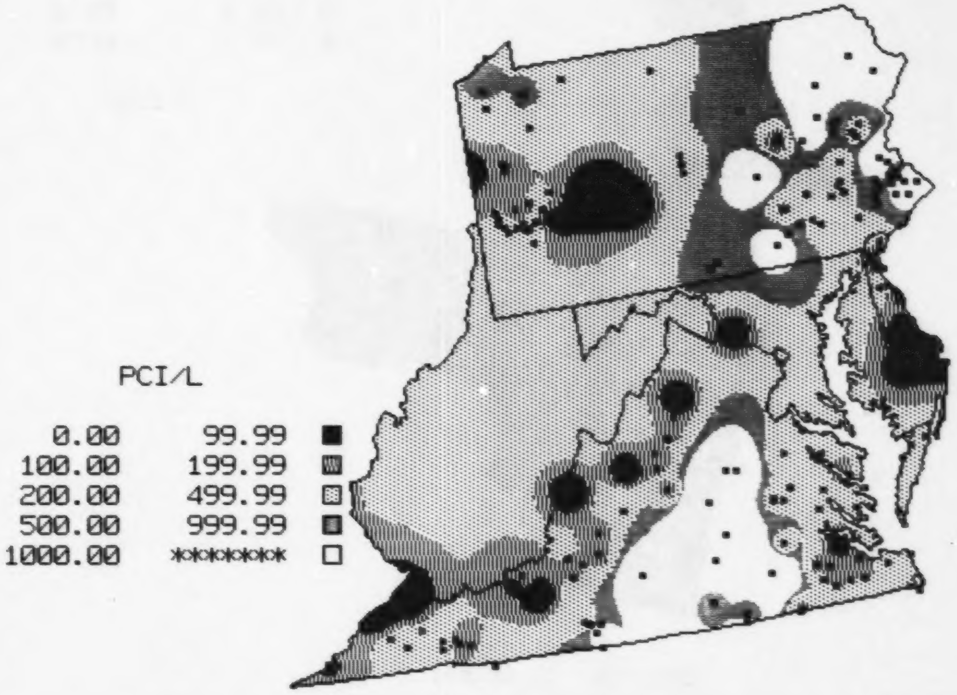

PCI/L
0.00 99.99 ■
100.00 199.99 ▥
200.00 499.99 ▨
500.00 999.99 ▩
1000.00 ******* □

Figure E.6. Gross alpha concentrations in public groundwater
Region III 1981-1982

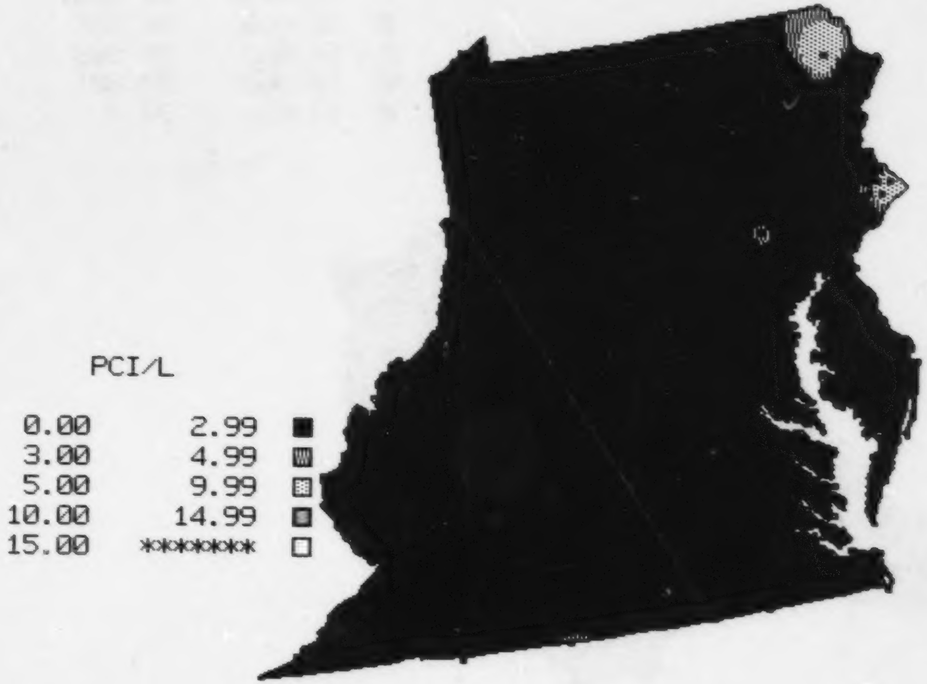

PCI/L
0.00 2.99 ■
3.00 4.99 ▥
5.00 9.99 ▦
10.00 14.99 ▩
15.00 ******* □

Figure E.7. Rn-222 concentrations in public groundwater
Region IV 1981-1982

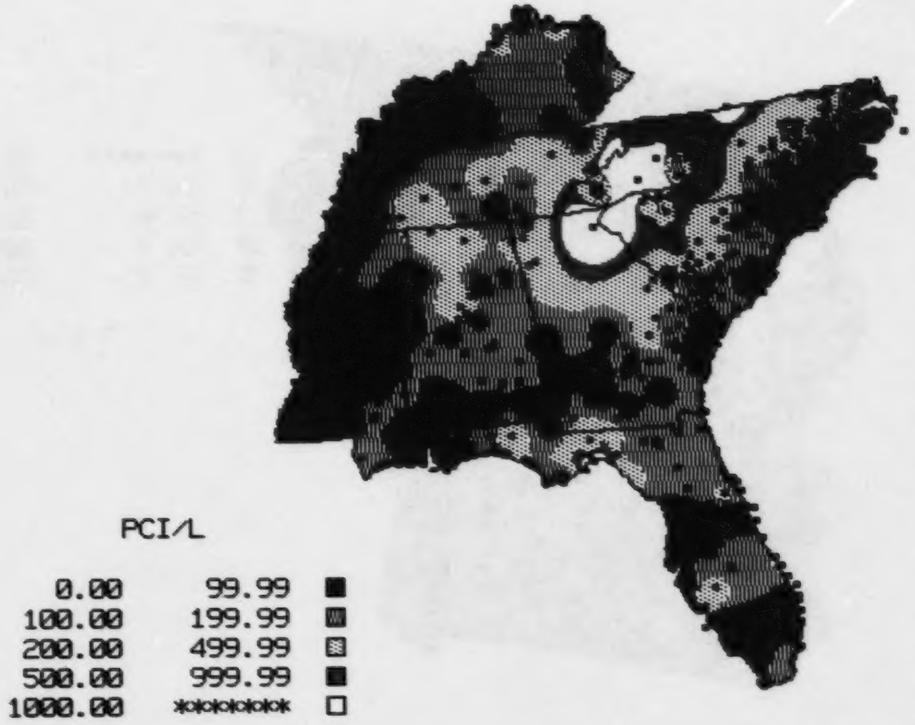

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.8. Gross alpha concentrations in public groundwater
Region IV 1981-1982

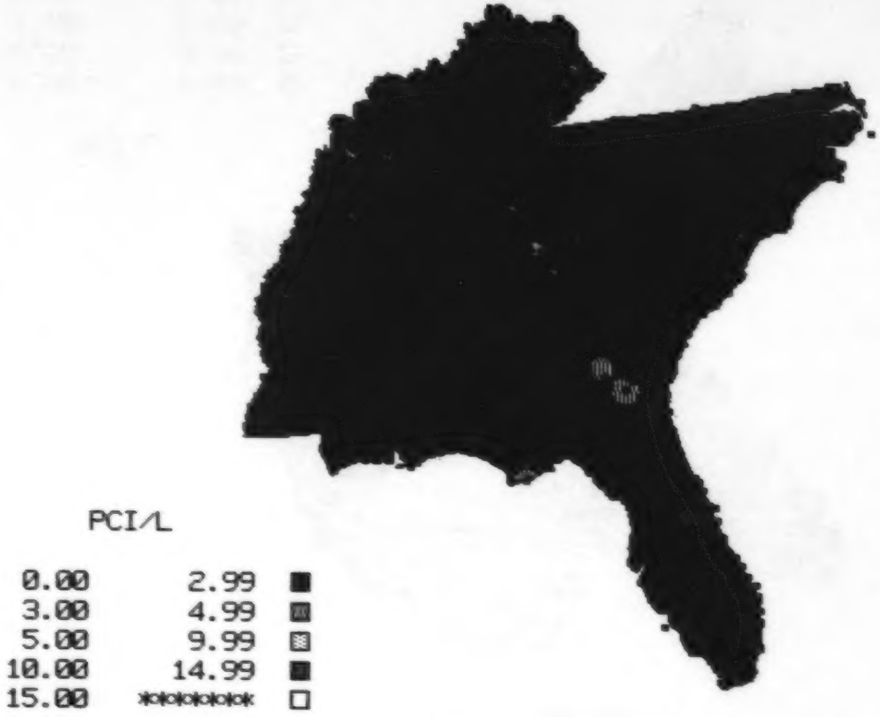

PCI/L
0.00 2.99 ■
3.00 4.99 ▨
5.00 9.99 ▨
10.00 14.99 ■
15.00 ******** □

Figure E.9. Ra-226 concentrations in public groundwater
Region IV 1981-1982

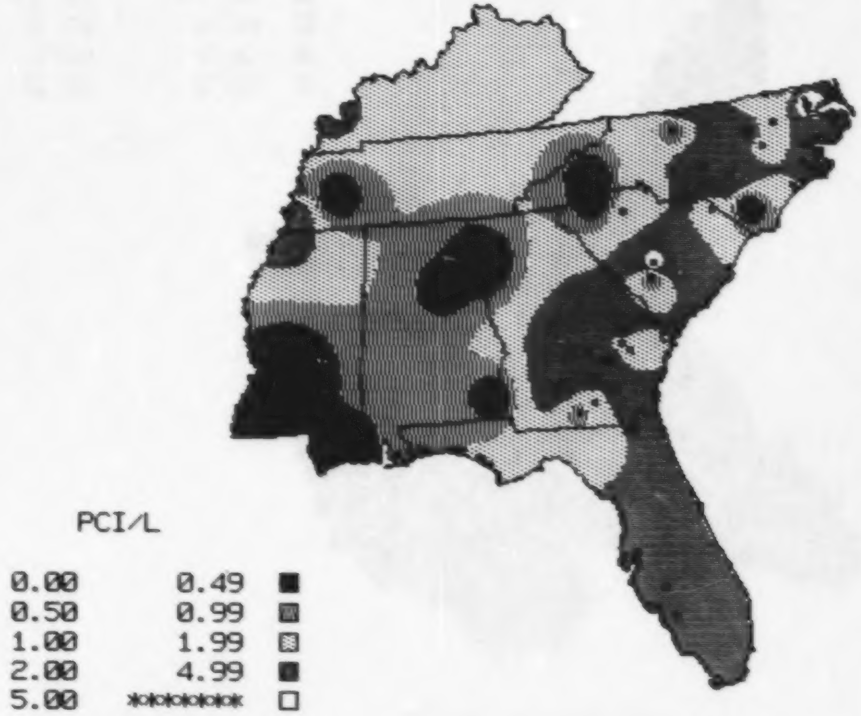

PCI/L
0.00 0.49 ■
0.50 0.99 ▨
1.00 1.99 ▨
2.00 4.99 ■
5.00 ******** □

Figure E.10. Total uranium concentrations in public groundwater
Region IV 1981-1982

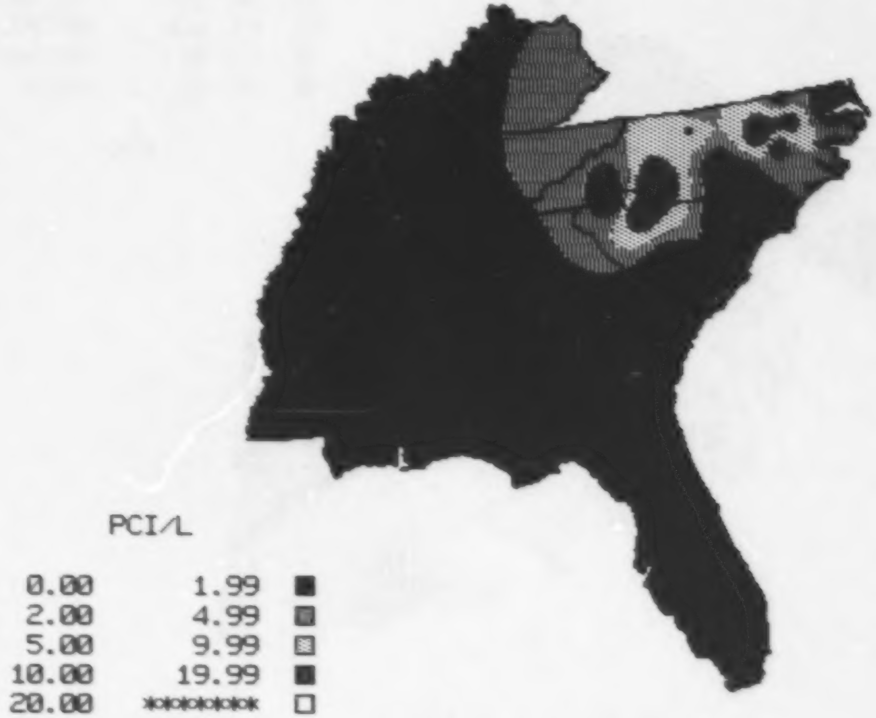

PCI/L
0.00 1.99 ■
2.00 4.99 ▨
5.00 9.99 ▨
10.00 19.99 ■
20.00 ******** □

Figure E.11. Rn-222 concentrations in public groundwater
Region V 1981-1982

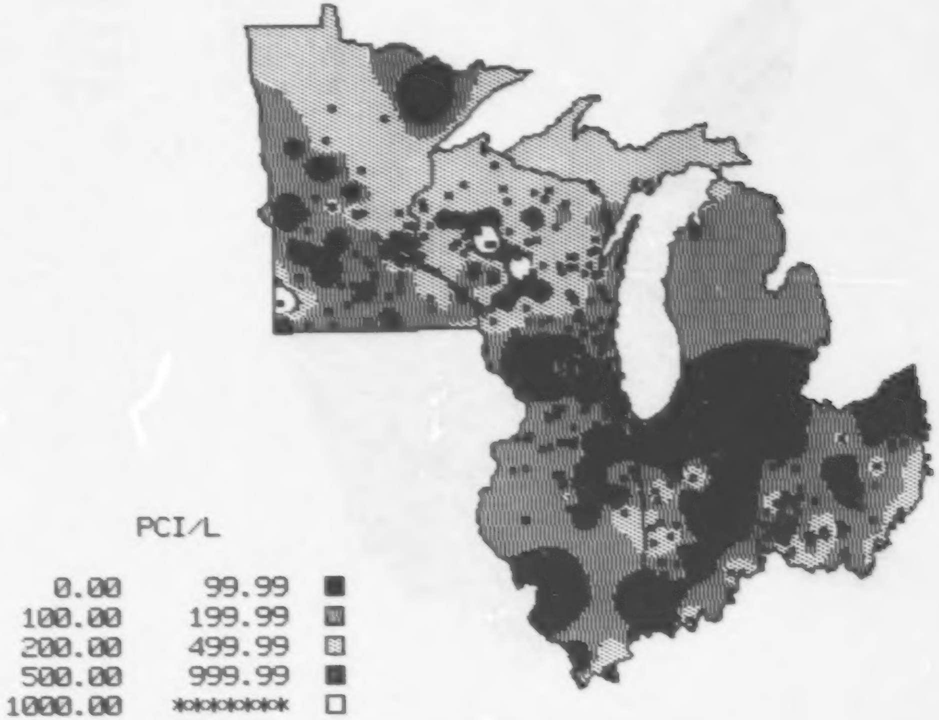

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******** □

Figure E.12. Gross alpha concentrations in public groundwater Region V 1981-1982

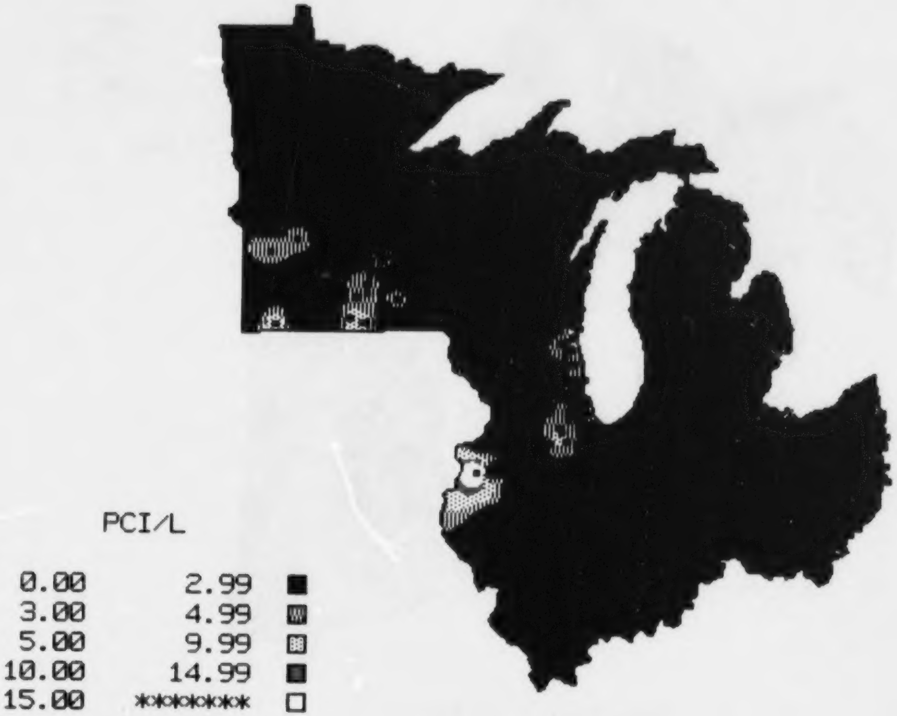

PCI/L
0.00 2.99 ■
3.00 4.99 ▥
5.00 9.99 ▩
10.00 14.99 ■
15.00 ******* □

Figure E.13. Ra-226 concentrations in public groundwater
Region V 1981-1982

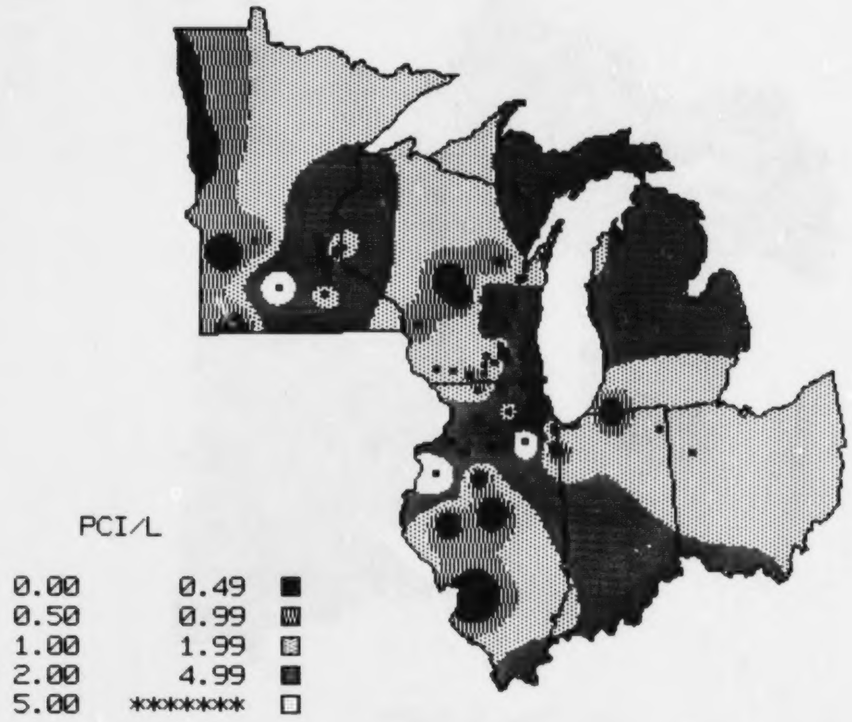
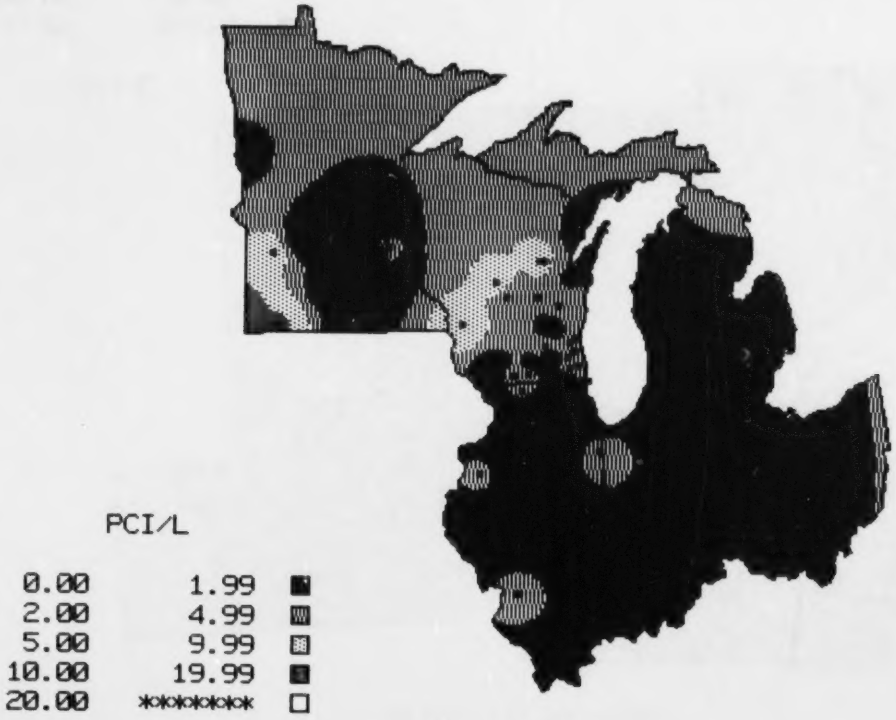

PCI/L
0.00 0.49 ■
0.50 0.99 ▥
1.00 1.99 ▨
2.00 4.99 ■
5.00 ******* □

Figure E.14. Total uranium concentrations in public groundwater Region V 1981-1982


PCI/L
0.00 1.99 ■
2.00 4.99 ▥
5.00 9.99 ▨
10.00 19.99 ■
20.00 ******* □

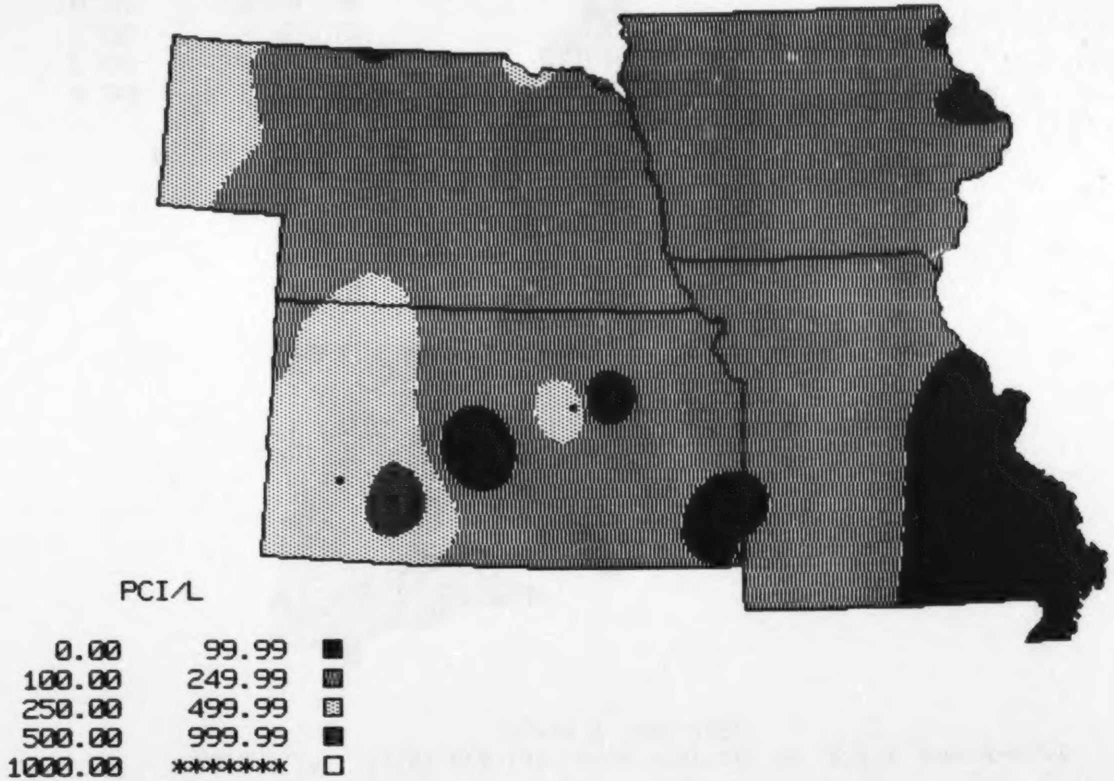

PCI/L
0.00 99.99 ■
100.00 249.99 ▦
250.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.15. Rn-222 concentrations in public groundwater Region VII 1981-1983

Figure E.16. Gross alpha concentrations in public groundwater Region VII 1981-1983

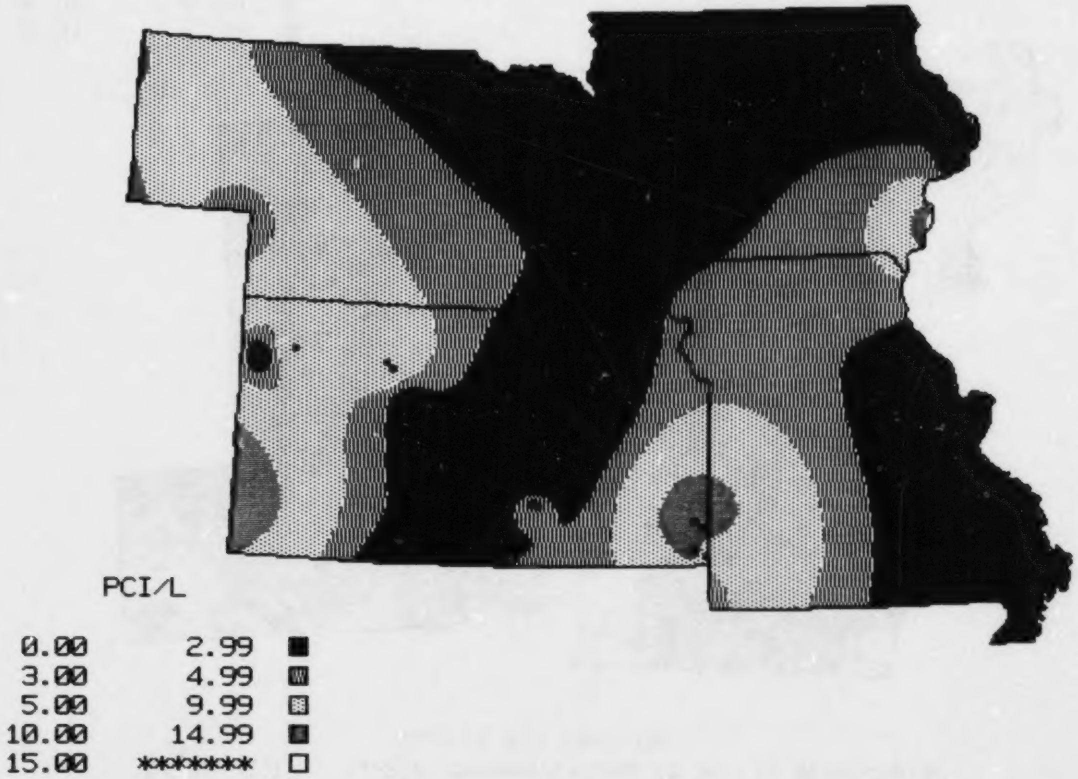

PCI/L
0.00 2.99 ■
3.00 4.99 ▨
5.00 9.99 ▨
10.00 14.99 ■
15.00 ******* □

Figure E.17. Ra-226 concentrations in public groundwater
Region VII 1981-1983

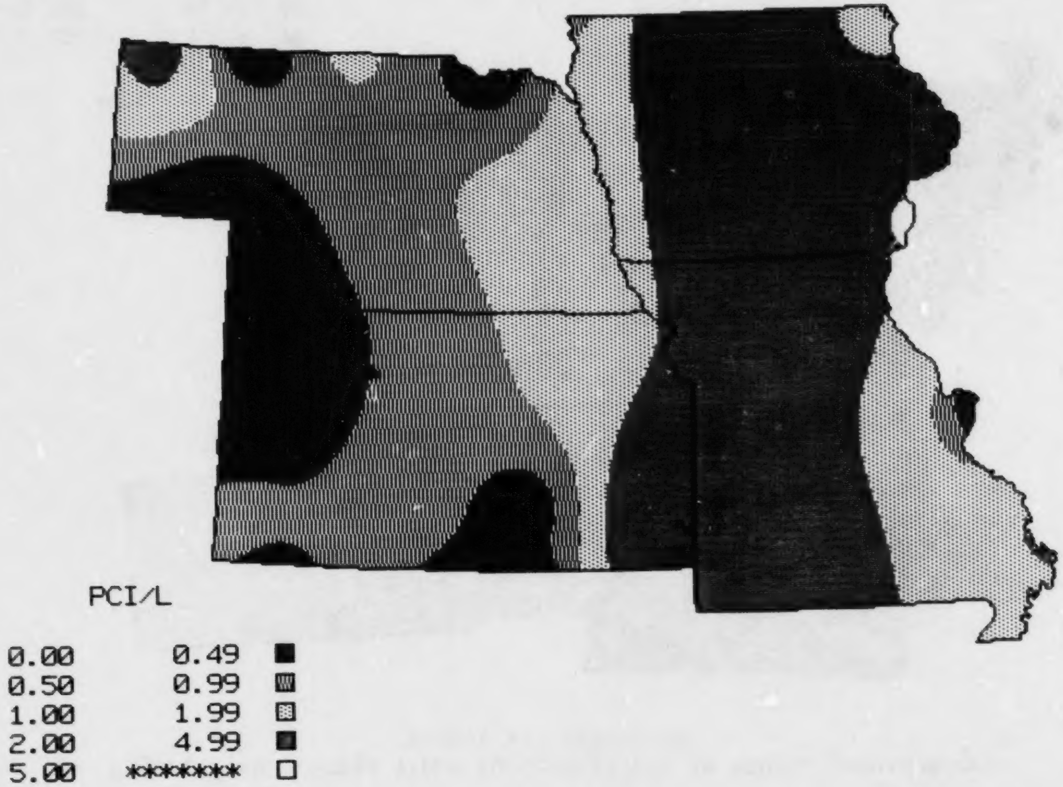

PCI/L
0.00 0.49 ■
0.50 0.99 ▥
1.00 1.99 ▨
2.00 4.99 ■
5.00 ******* □

Figure E.18. Ra-228 concentrations in public groundwater
Region VII 1981-1983

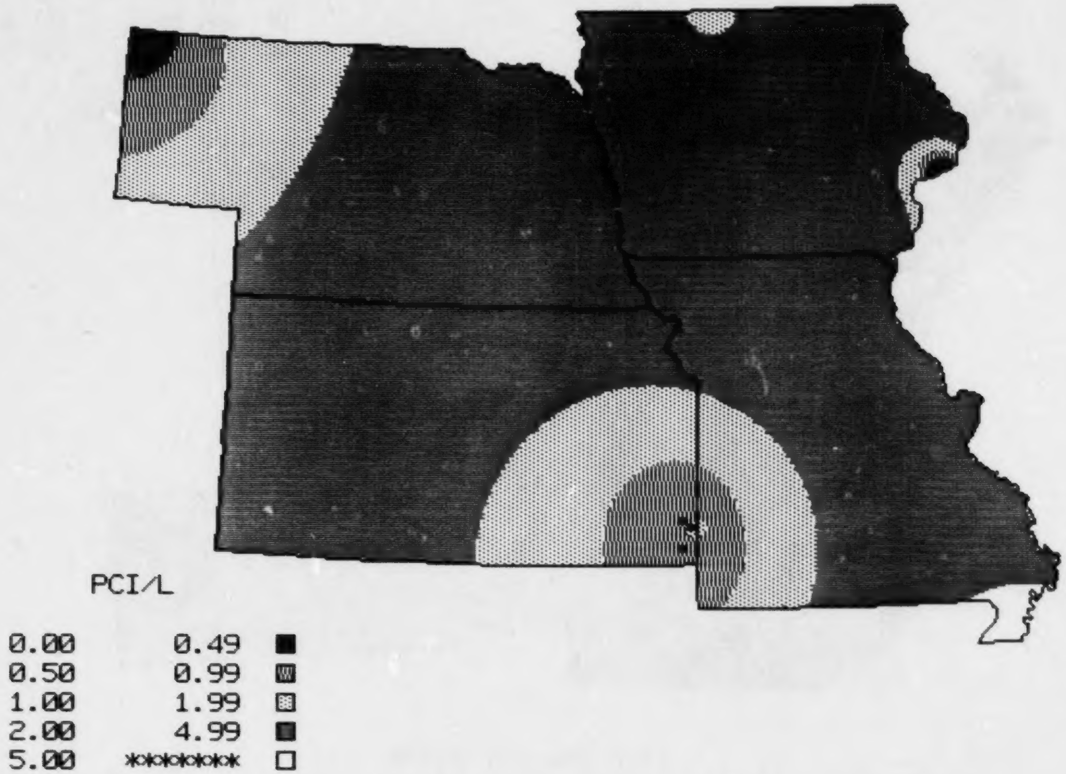

PCI/L
0.00 0.49 ■
0.50 0.99 ▨
1.00 1.99 ▦
2.00 4.99 ■
5.00 ******* □

Figure E.19. Total uranium concentrations in public groundwater Region VII 1981-1983

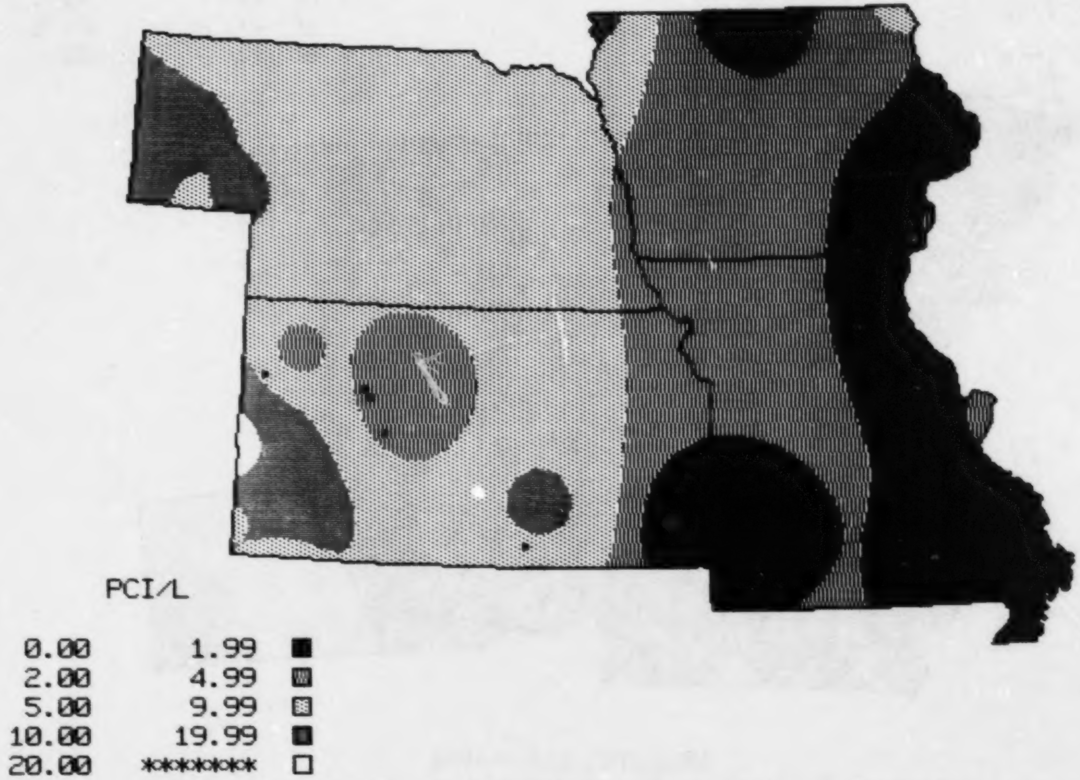

PCI/L
0.00 1.99 ■
2.00 4.99 ▨
5.00 9.99 ▨
10.00 19.99 ■
20.00 ******* □

Figure E.20. Rn-222 concentrations in public groundwater Region VIII 1981-1982

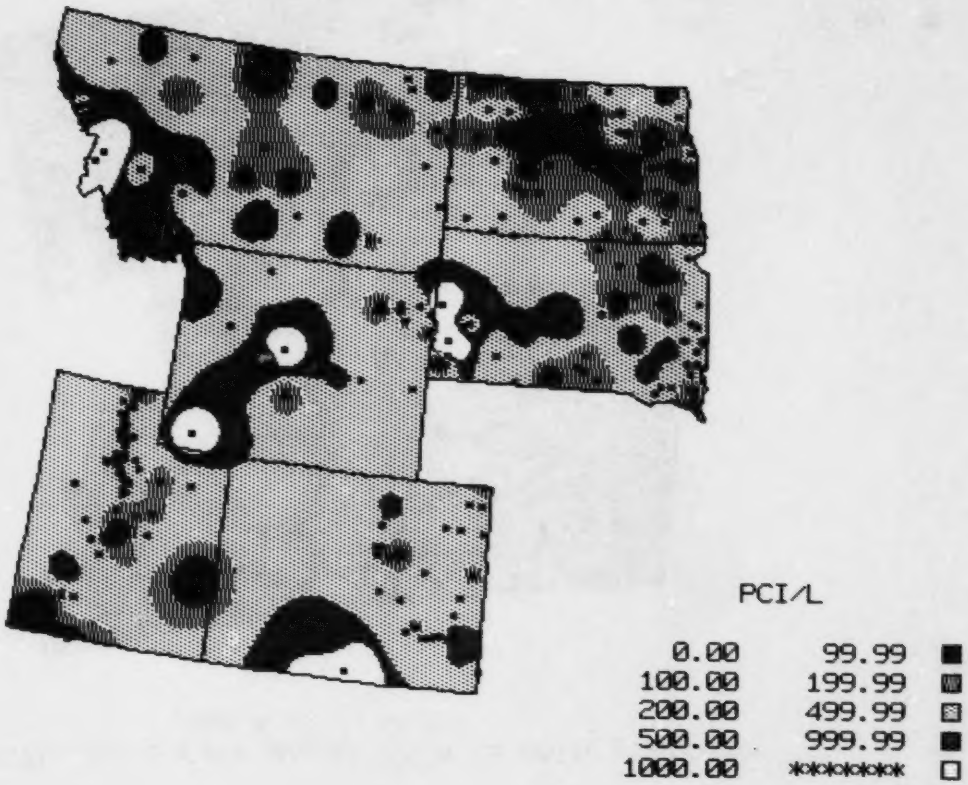

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.21. Gross alpha concentrations in public groundwater Region VIII 1981-1982

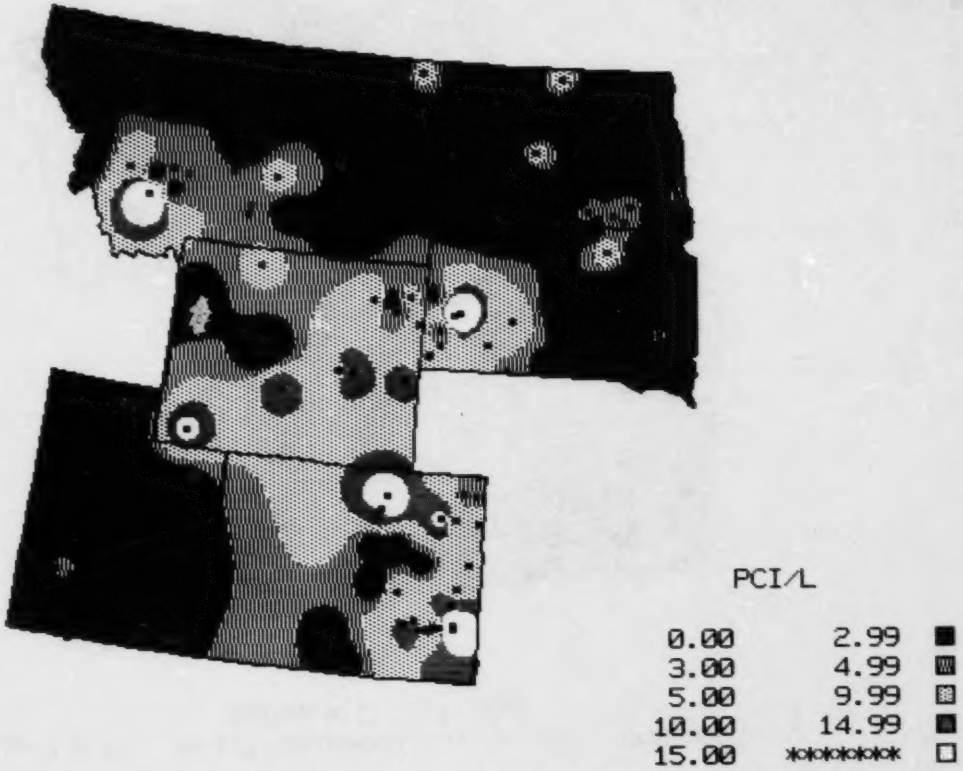

PCI/L
0.00 2.99 ■
3.00 4.99 ▥
5.00 9.99 ▨
10.00 14.99 ■
15.00 ******* □

Figure E.22. Ra-226 concentrations in public groundwater
Region VIII 1981-1982

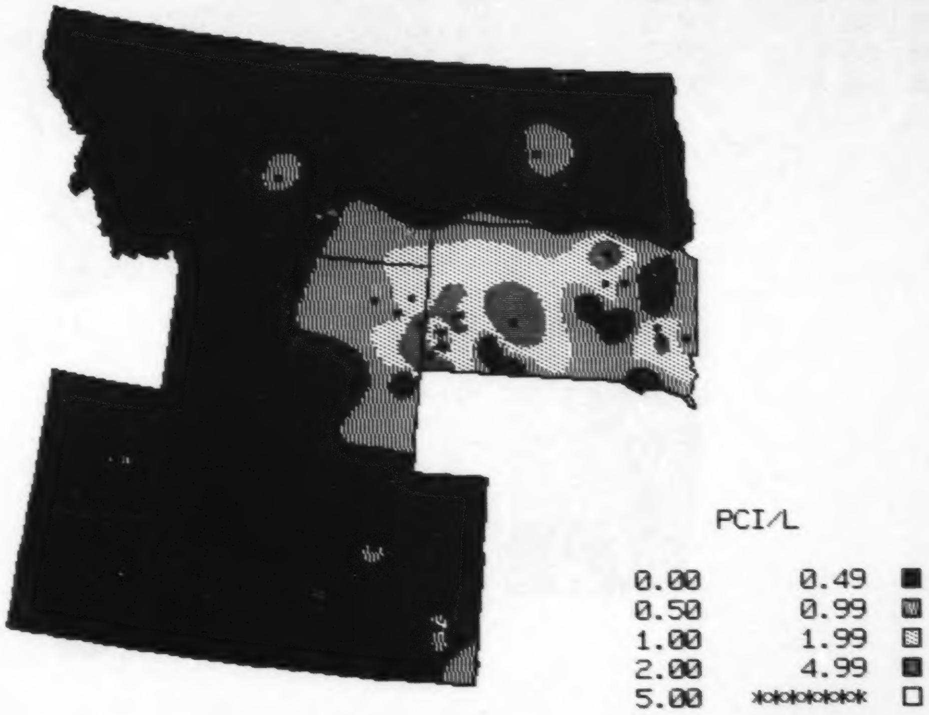

PCI/L
0.00 0.49 ■
0.50 0.99 ▨
1.00 1.99 ▨
2.00 4.99 ■
5.00 ******** □

Figure E.23. Total uranium concentrations in public groundwater
Region VIII 1981-1982

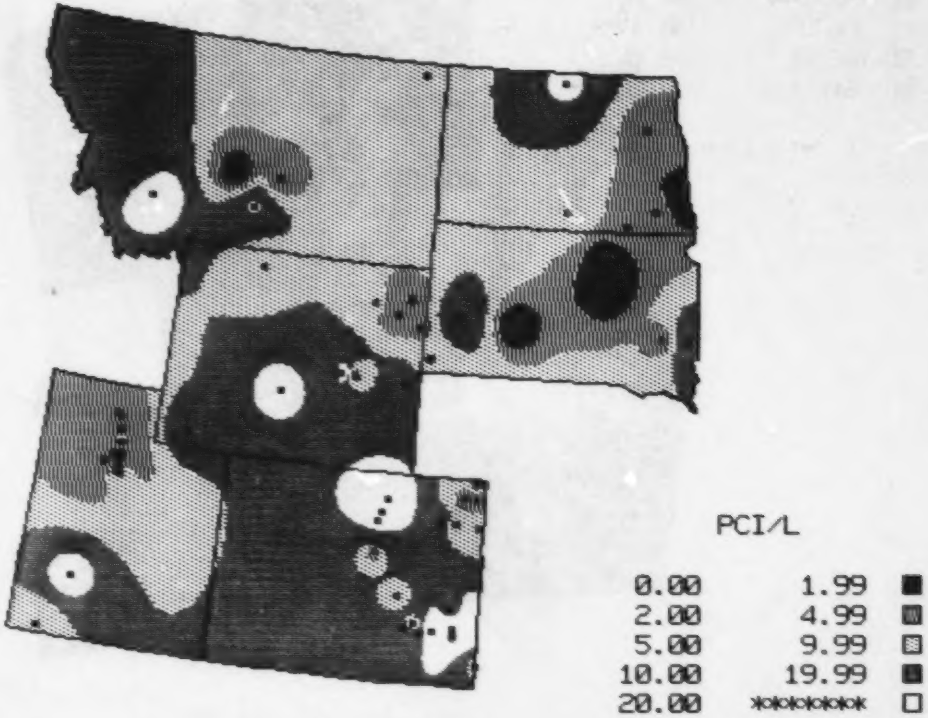

PCI/L
0.00 1.99 ■
2.00 4.99 ▨
5.00 9.99 ▨
10.00 19.99 ■
20.00 ******* □

Figure E.24. Rn-222 concentrations in public groundwater
Region IX 1981-1982

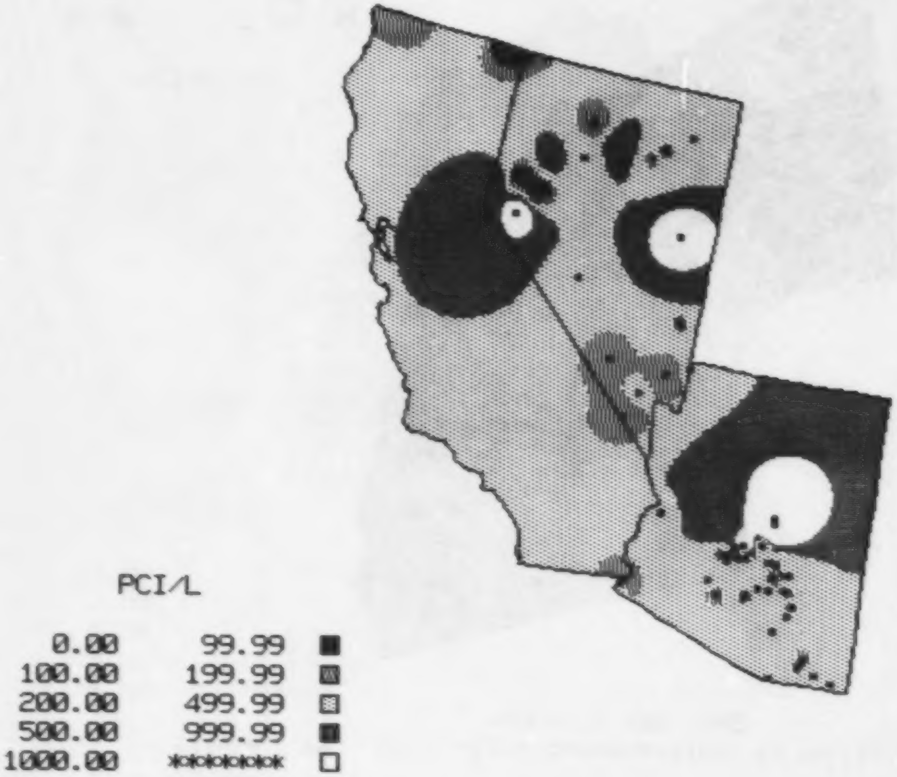

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.25. Gross alpha concentrations in public groundwater
Region IX 1981-1982

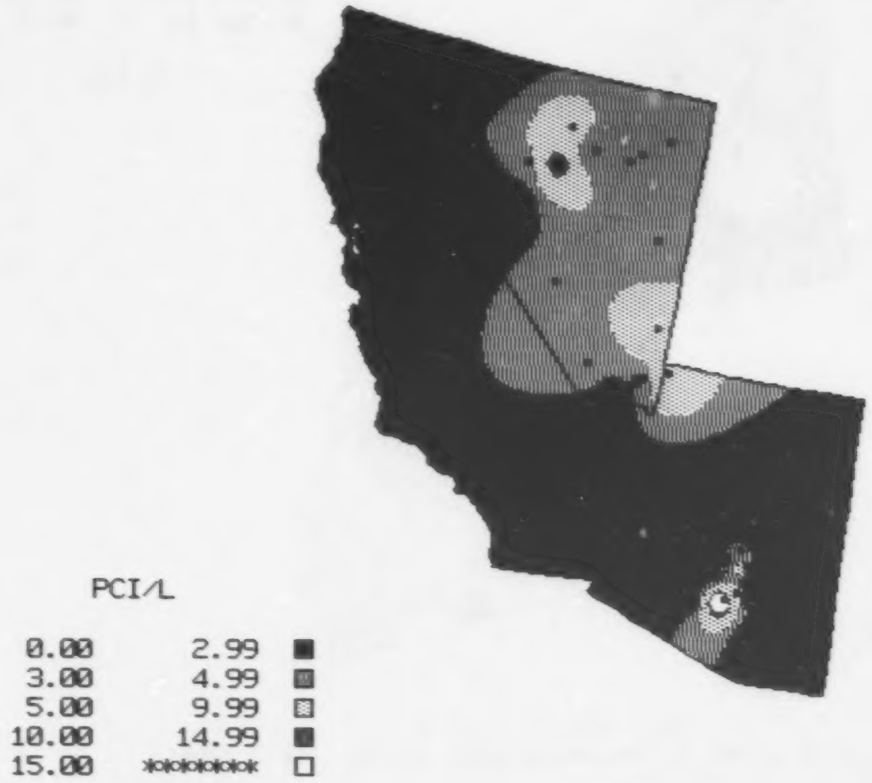

PCI/L
0.00 2.99 ■
3.00 4.99 ▨
5.00 9.99 ▨
10.00 14.99 ■
15.00 ******** □

Figure E.26. Ra-226 concentrations in public groundwater
Region IX 1981-1982

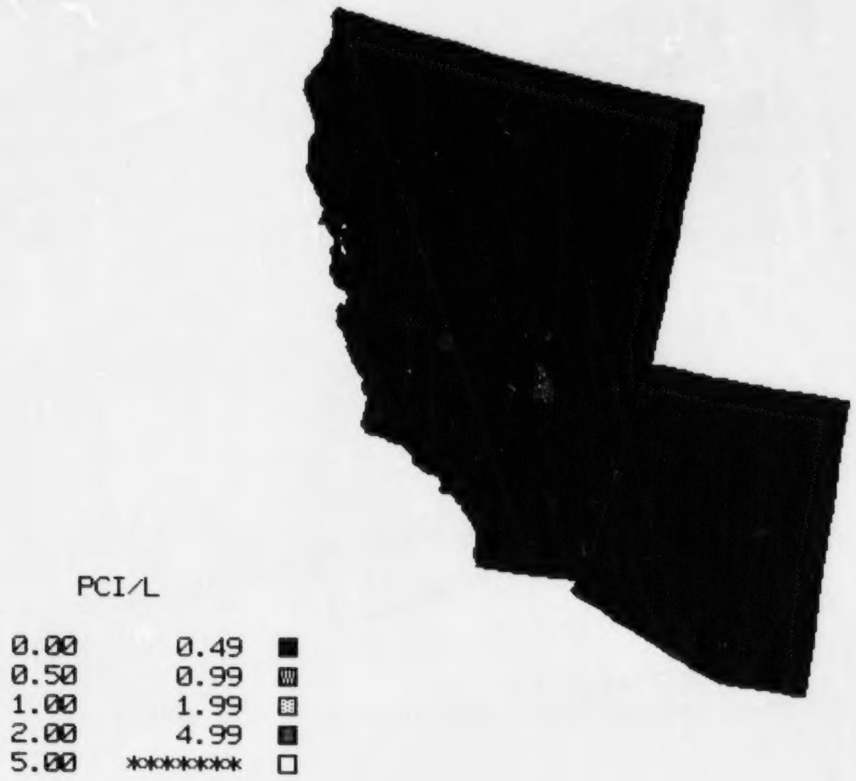

PCI/L
0.00 0.49 ■
0.50 0.99 ▨
1.00 1.99 ▦
2.00 4.99 ■
5.00 ******* □

Figure E.27. Total uranium concentrations in public groundwater
Region IX 1981-1982

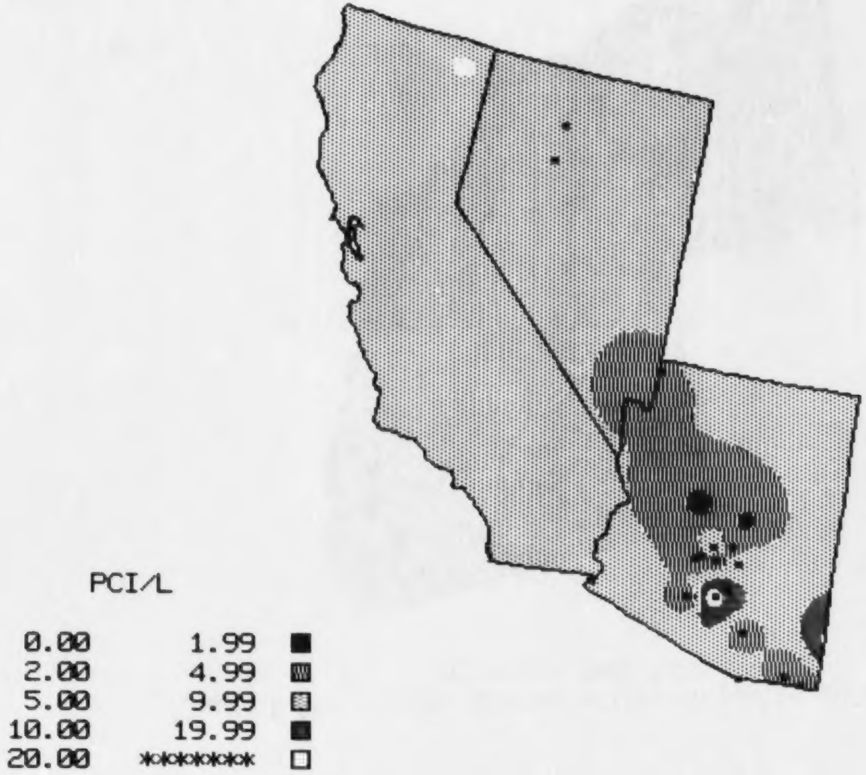

PCI/L
0.00 1.99 ■
2.00 4.99 ▨
5.00 9.99 ▨
10.00 19.99 ■
20.00 ******* □

Figure E.28. Rn-222 concentrations in public groundwater
Region X 1981-1982

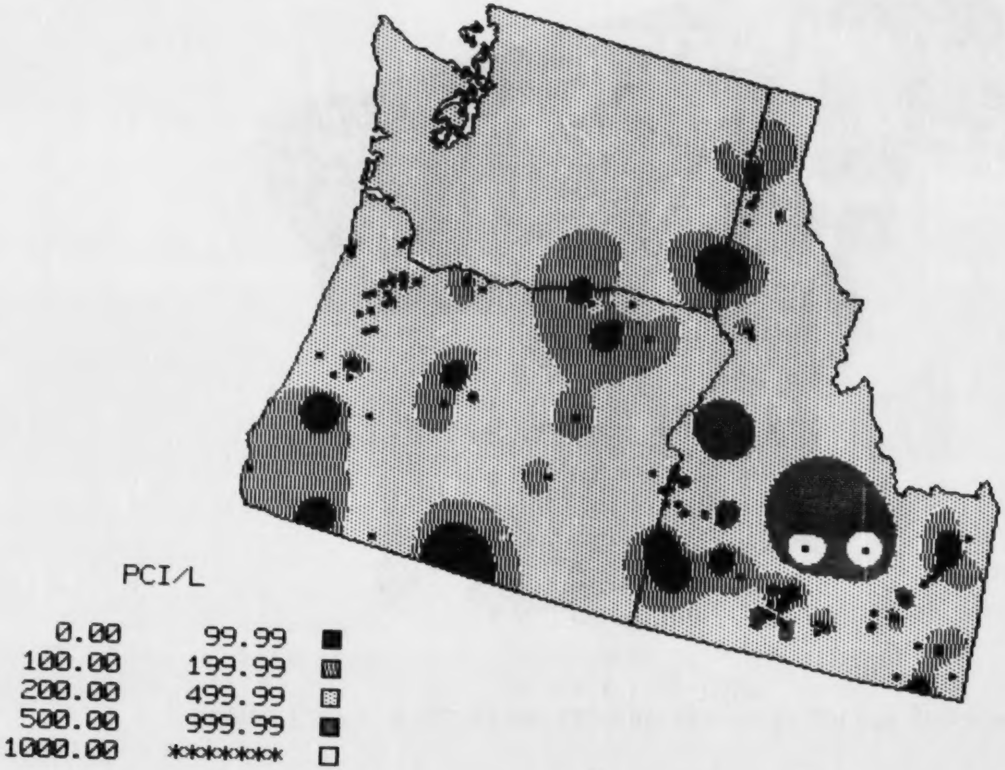

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.29. Gross alpha concentrations in public groundwater Region X 1981-1982

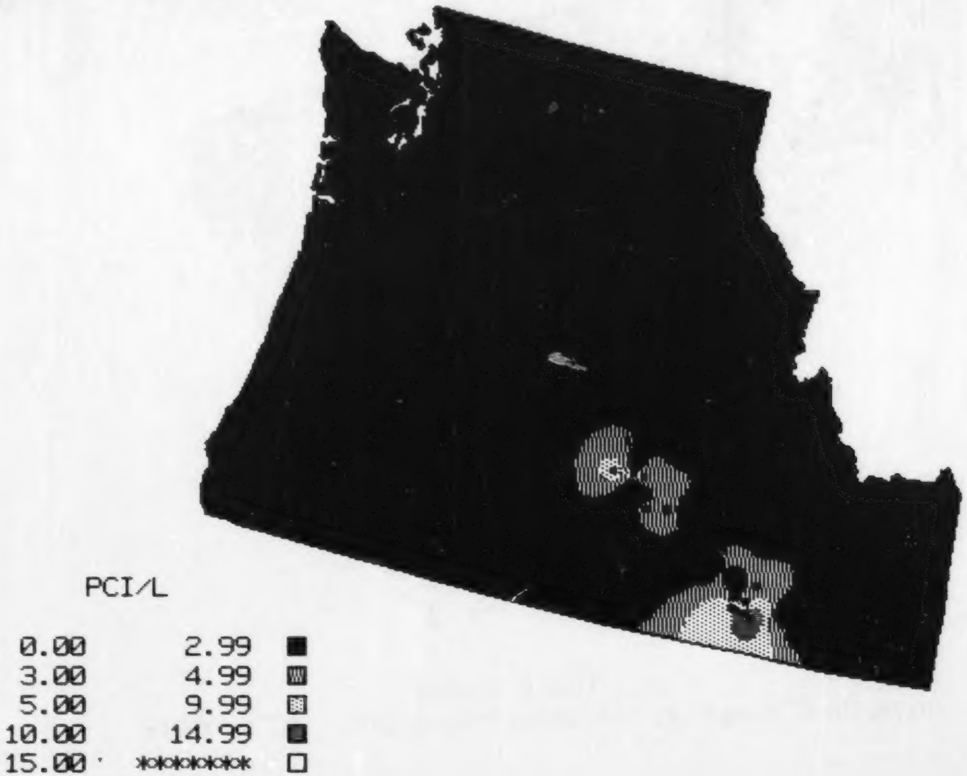

PCI/L
0.00 2.99 ■
3.00 4.99 ▨
5.00 9.99 ▨
10.00 14.99 ■
15.00 ******* □

Figure E.30. Rn-222 concentrations in public groundwater
Georgia, N. Carolina, S. Carolina, Virginia
1981-1982

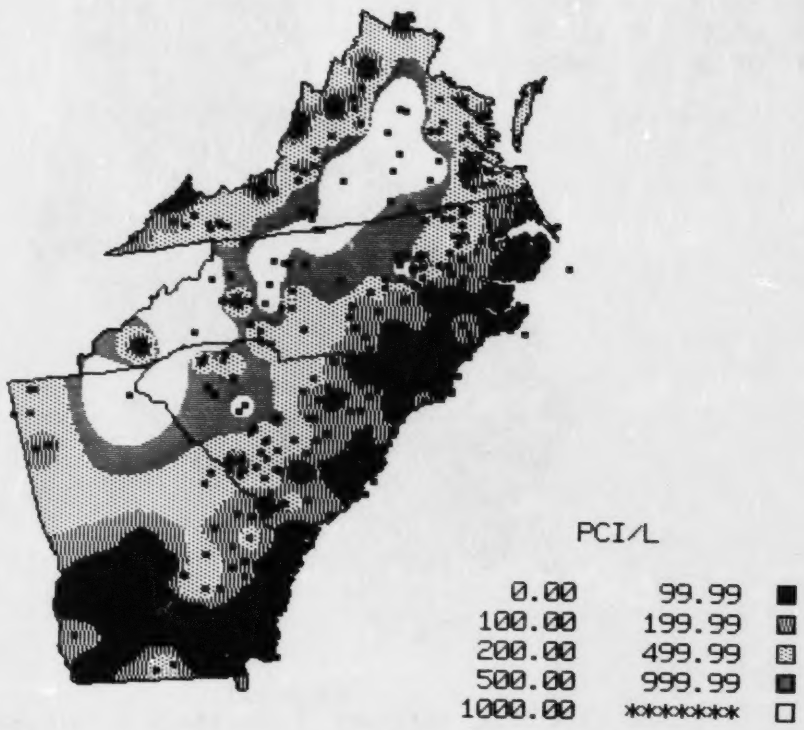

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.31. Ra-226 concentrations in public groundwater
Georgia, N. Carolina, S. Carolina, Virginia
1981-1982

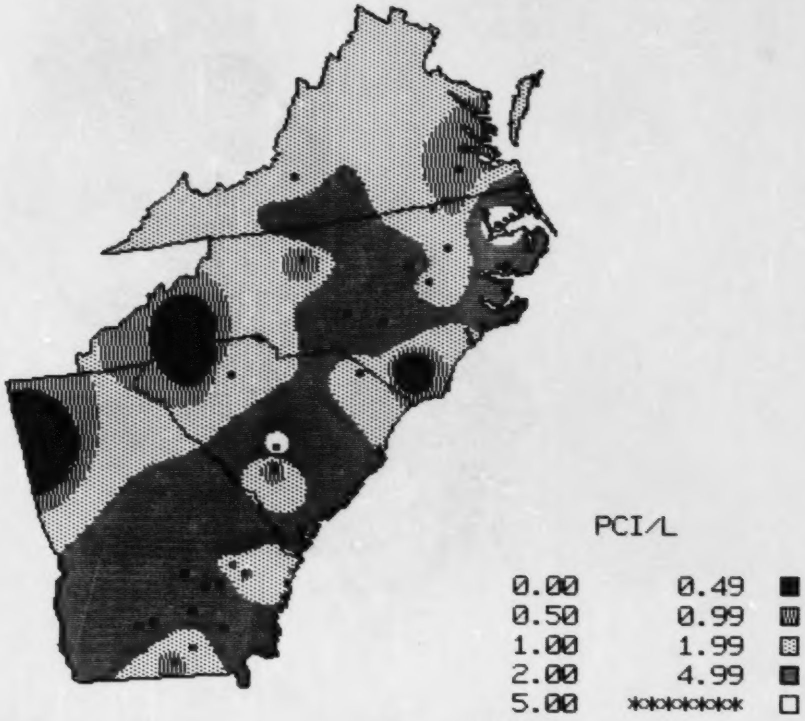

PCI/L
0.00 0.49 ■
0.50 0.99 ▥
1.00 1.99 ▨
2.00 4.99 ■
5.00 ******** □

Figure E.32. Total uranium concentrations in public groundwater
Georgia, N. Carolina, S. Carolina, Virginia
1981-1982

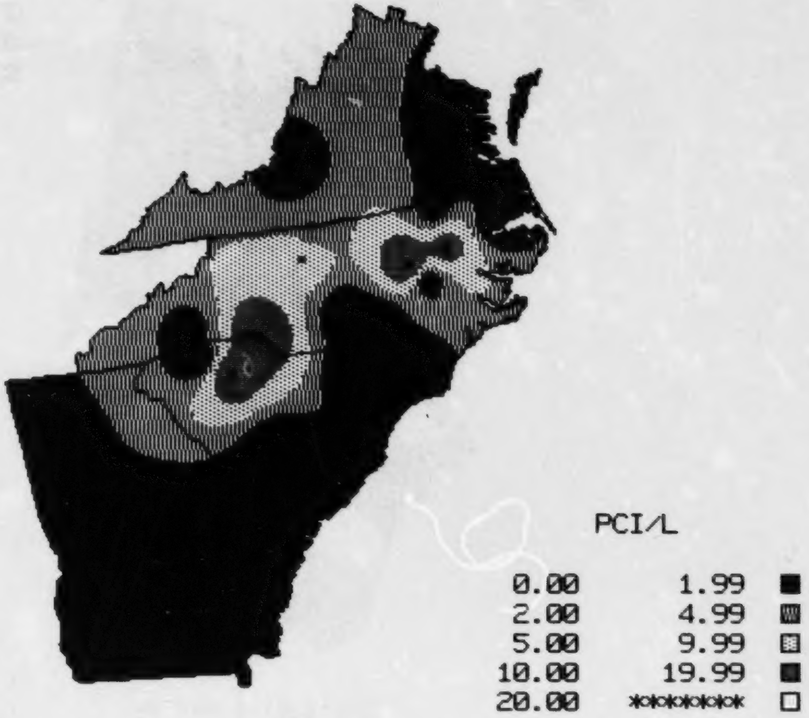

PCI/L
0.00 1.99 ■
2.00 4.99 ▥
5.00 9.99 ▦
10.00 19.99 ■
20.00 ******* □

Figure E.33. Rn-222 concentrations in public groundwater Region I 1978-1982

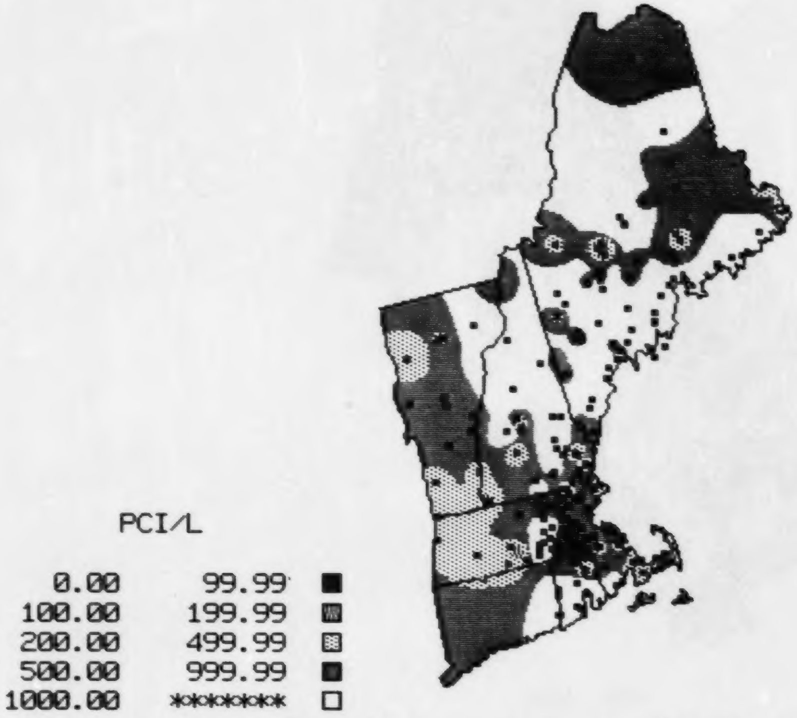

PCI/L
0.00 99.99 ■
100.00 199.99 ▩
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □

Figure E.34. Rn-222 concentrations in public groundwater Region II 1978-1982

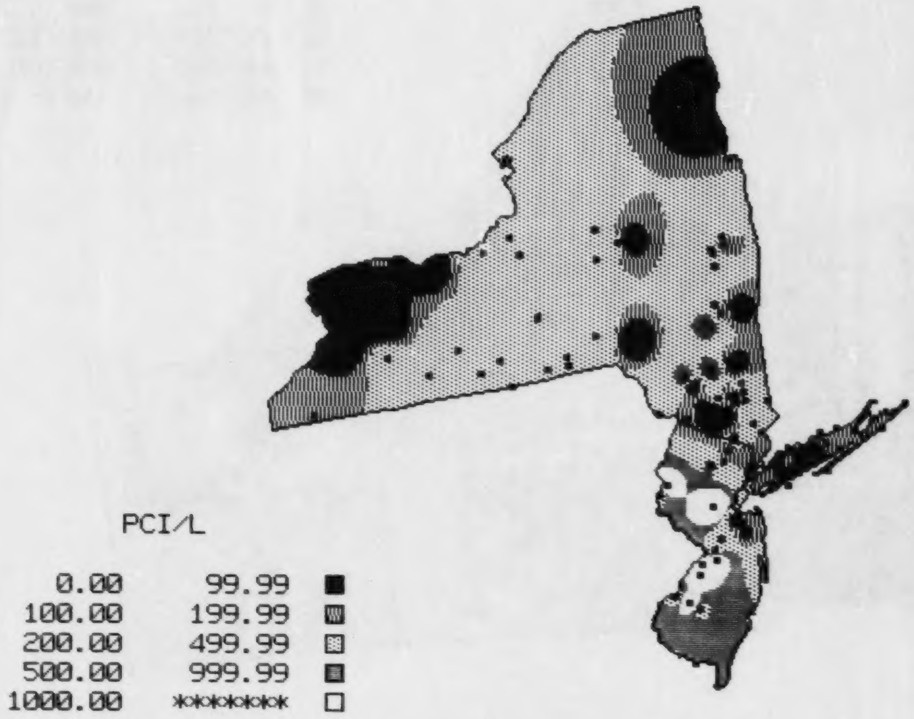

PCI/L
0.00 99.99 ■
100.00 199.99 ▥
200.00 499.99 ▩
500.00 999.99 ▦
1000.00 ******* □

Figure E.35. Rn-222 concentrations in public groundwater
Region VI 1978-1982

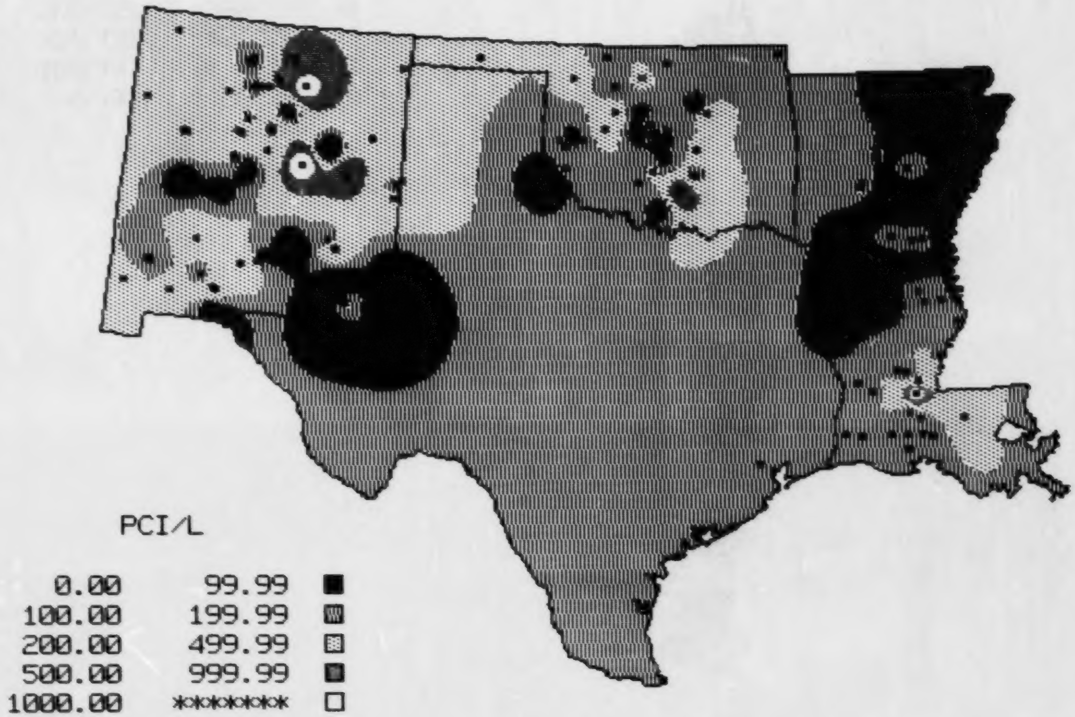

PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▩
500.00 999.99 ■
1000.00 ******* □

Figure E.36. Rn-222 concentrations in public groundwater
Region VII 1978-1982

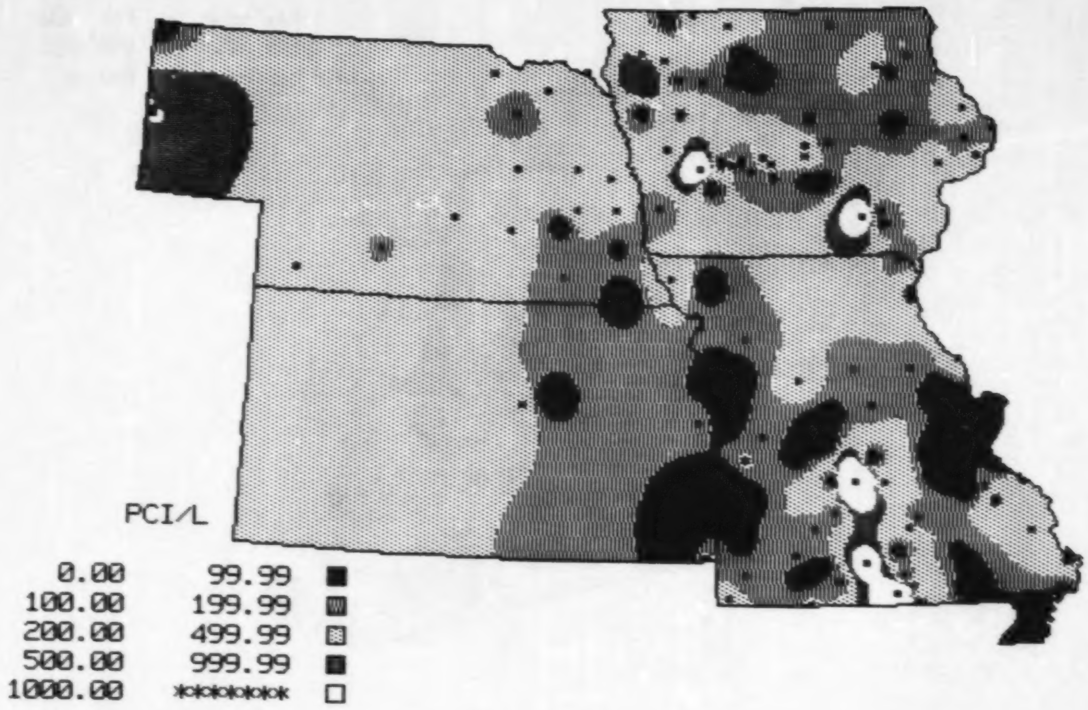
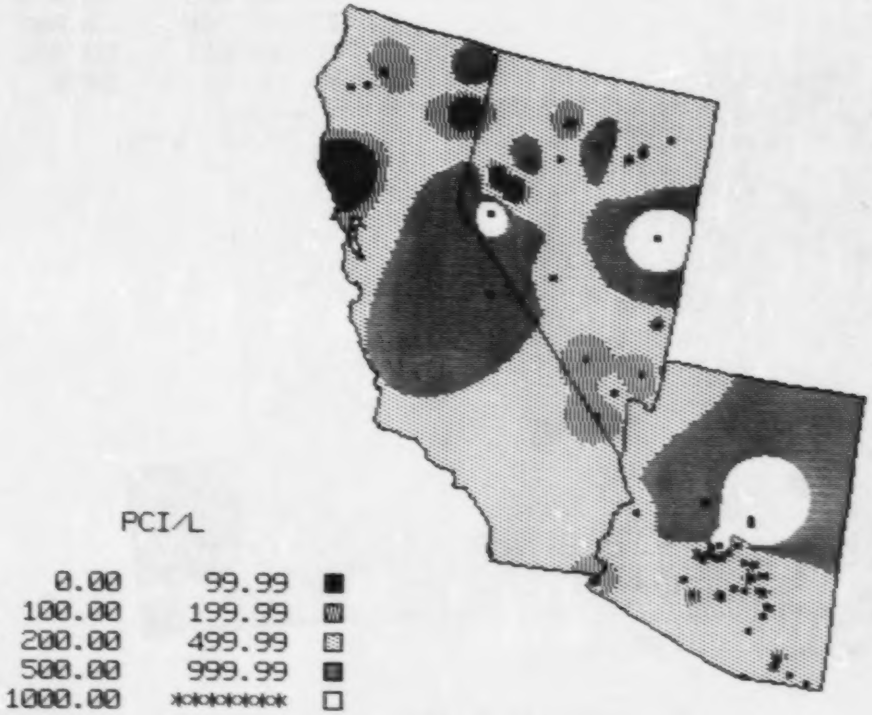

PCI/L
0.00 99.99 ■
100.00 199.99 ▥
200.00 499.99 ▩
500.00 999.99 ■
1000.00 ******* □

Figure E.37. Rn-222 concentrations in public groundwater
Region IX 1978-1982


PCI/L
0.00 99.99 ■
100.00 199.99 ▨
200.00 499.99 ▨
500.00 999.99 ■
1000.00 ******* □